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DEATH TERMINATION EXPERIENCE FOR DI DISABLED WORKERS AND SSI DISABLED ADULTS WITH HIV-RELATED IMPAIRMENTS

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Introduction

It has been over 20 years since disabled beneficiaries first appeared on the Social Security Disability Insurance (DI) and Supplemental Security Income (SSI) rolls as a result of Acquired Immunodeficiency Syndrome (AIDS). Since the first several hundred of such beneficiaries began receiving payments in 1982, the Social Security Administration has monitored the epidemic's impact on expenditures from the DI Trust Fund as well as expenditures of Federal general revenue under the SSI program.

This monitoring process has involved periodic examinations of agency administrative records for cases on the DI or SSI program rolls that could be identified as receiving disability benefits, at least in part, due to infection with the Human Immunodeficiency Virus (HIV). The results of these analyses were used to produce rough estimates of historical and projected program expenditures due to HIV. Modeling the impact of HIV on program expenditures required an understanding of the circumstances causing HIV-infected persons to apply for benefits, the factors involved in favorable disability determinations, and the reasons that HIV beneficiaries leave the rolls.

The primary reason for termination of benefits payable to HIV beneficiaries has been death, so a careful examination of mortality experience is clearly a key to understanding duration on the rolls. Prior evaluations of HIV mortality had been done on a rough aggregate basis. The purpose of this note is to present the detailed results of the first person-based mortality study of the extensive data that we have collected. The current study is based on a total of roughly 1.4 million life-years of exposure distributed over two 5-year periods: 1992-96 and 1997-2001, and represents the most extensive case study of HIV mortality produced from administrative records.

History of the HIV data collection project

As indicated, this study represents the culmination of two decades of efforts to track the impact of HIV on the cash benefit programs administered by the Social Security Administration (SSA). The agency's collection of administrative data that provide the basis for this study was developed over time as the world's scientific community gained a greater understanding of the effects of HIV infection on diverse body systems. Those findings have, in turn, come to affect SSA's evaluation of claims for disability benefits based on the presence of the infection. To fully appreciate the value of the current study, as well as its limitations, it is important to have some understanding of how SSA's collection of HIV data has evolved over the past 20 years.

In the early years of the HIV epidemic, infected persons who presented themselves as claimants for DI or SSI benefits, most often did so as a result of one or more diseases, such as *Kaposi's sarcoma* and *pneumocystis carinii pneumonia*. These particular diseases appeared to be present primarily due to an impaired immune system which resulted from the presence of an HIV infection. Such claims were tentatively identified as being associated with HIV, and the claims folders were forwarded to SSA headquarters for confirmation. The first data collection on HIV claimants was the result of this manual examination of claims folders.

As the HIV epidemic spread, and the number of disability claims grew correspondingly, SSA could no longer manage the "hand-selection" of cases for its compilation of HIV data. As a proxy for the manual identification process, the Office of the Chief Actuary compiled a list of certain impairment codes[1] commonly assigned to HIV cases, which was then used to electronically retrieve the corresponding administrative records from SSA's two main payment record files—the Master Beneficiary Record (MBR) for DI and the Supplemental Security Record (SSR) for SSI.

However, since no single impairment code yet existed for HIV, and since the assignment of impairment codes can be subject to some misclassification in the claims taking process, the selection of cases included in SSA's compilation of HIV data was exposed to both type I and type II error.[2] Nevertheless, the overall characteristics of the cases identified seemed consistent with the cases that had been identified in the earlier manual folder evaluation, providing some assurance that the cases under study were to a large degree correctly identified.

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[1] SSA diagnosis codes are similar in concept to (but not identical with) the codes promulgated by the World Health Organization in its International Classification of Diseases (ICD codes). Before 1987, there was no ICD code specifically for HIV. The proxy used for our data selection criterion was to include all cases which had been assigned a primary diagnosis code in the range 2790-2794 (for general impairments related to immune deficiency), 1363 (for pneumocystis carinii pneumonia), and 1739 (for Kaposi's sarcoma).

[2] Allegorical reference to statistical errors made in classic hypothesis testing. In this context, type I error refers to classifying an infected beneficiary as non-HIV; type II error refers to classifying a non-infected beneficiary as HIV.

When the World Health Organization introduced ICD series 042.0-044.9 specifically for HIV-related diseases[3], SSA followed with a corresponding series of impairment codes. At that time all HIV-related impairments were to be assigned a diagnosis code in that range. As a result, the collection of data shifted to identifying new cases using the now-familiar HIV diagnosis codes of 042, 043, and 044, while continuing to track the experience of HIV cases that had been identified under prior evaluations.

Soon after, some information was added to the data collection process from the agency's transactions file for disability claims processed by the State Disability Determinations Services—known as the *831 file*. In addition to the primary diagnosis code—which is carried on the MBR and SSR—the 831 file also contains a secondary diagnosis code. This code allowed us to identify additional cases involving HIV as a contributing (if not the primary) reason for impairment.

Since 1990, our process for collecting HIV data has remained relatively unchanged. Administrative data on previously identified cases is updated every six months, in June and December. At the same time, newly-identified HIV beneficiary cases are added to the data collection.

SSA's evaluation of HIV-related impairments

In addition to changes in the way we have collected data on HIV cases, the standards used to evaluate potential HIV disability claims have also been modified over time as medical knowledge of HIV has progressed. While SSA has tried to remain consistent with the criteria and rationale of the Centers for Disease Control and Prevention (CDC) and World Health Organization, the agency has found it necessary to define its own guidelines for evaluating HIV-related impairments from the perspective of administering the DI and SSI programs. The SSA definition and medical listings with regard to HIV have evolved from the earliest definitions provided by CDC when the disease was first listed under *infectious/parasitic* category, to the time when HIV received its own regulatory listing in the *Listing of Impairments*[4] in June 1993.

As the spectrum of manifestations of HIV-infection became better defined, it became apparent that some progressive and seriously disabling conditions were not included in the definition of AIDS. In addition, clinicians began to identify a group of individuals with a variety of signs and symptoms which were thought to be caused by the HIV virus. The collection of these symptoms came to be known as *AIDS-Related Complex (ARC)*. Effective September 1987, the CDC began using a revised criteria for determining which cases involving HIV should be reported for AIDS statistical surveillance purposes. The revision expanded the definition to include HIV Dementia and HIV Wasting. To remain consistent, SSA revised its definition for AIDS, but discontinued the automatic link with the CDC definition. The revised criteria lead to reclassifying as AIDS a number of then-current beneficiaries who were on the disability rolls due to ARC, rather than a definitively diagnosed case of AIDS. During this time, the number of AIDS-related impairments on the DI rolls grew rapidly from 5,700 at the end of 1986 to 17,400 by the end of 1988.

In 1990, SSA issued new guidelines to include criteria for symptomatic HIV which is not AIDS, including all lymphomas and other disease manifestations coupled with 200 CD4 count and marked functional limitations. The expanded guidelines resulted in a new class of HIV impairments, and by 1992, the DI program had experienced its most critical year for new HIV entitlements as an additional 33,000 workers began receiving payments. However, the death rate among those afflicted was so high that monthly benefit payments were often made only for a relatively short period of time, if at all. Many never received payments, failing to survive the requisite 5-month waiting period under the DI program. One-third of those who made it onto the rolls because of HIV impairments had died by the end of the calendar year in which they became entitled; two-thirds had died by the end of the following year.

By 1996, CDC began reporting sharp declines in AIDS incidence as a result of public awareness and widespread use of *highly-active antiretroviral therapy* (HAART) which slows the reproduction of the virus and thus the progression of HIV infection to AIDS.[5] By 1998, CDC reported a leveling of incidence and essentially no change from 1999 to 2001 with roughly 41,000 new AIDS cases reported each year over that period. DI entitlements followed the decline in population incidence as infected workers remained employed for longer periods of time. Since peaking in 1992, the number of workers becoming entitled to DI benefits based on HIV has fallen in recent years to roughly 10,000 annually.

Mortality 1997-2001

As of December 31, 2002, the CDC reported nearly 385,000 persons in the U.S. living with AIDS, and an estimated 41,000 new diagnoses of AIDS infections occurring annually. From the beginning of the epidemic through 2002, CDC estimates that roughly 502,000 persons have died with AIDS in the U.S.[6]

[3] As set forth in Ninth Revision of the International Classification of Diseases (ICD-9) of the World Health Organization, effective 1987. Note that these codes have since been converted under Tenth Revision (ICD-10) to B20-B24 series, effective 1998.

[4] Refer to Appendix C for an overview of the definition of disability and the determination process.

[5] For further insight, refer to the CDC annual *HIV/AIDS Surveillance Report*, which can be obtained from their website www.cdc.gov. CDC provides annual compilations of State HIV surveillance data and Federally mandated AIDS reports. This national report on cases of HIV infection and AIDS in the United States is used by CDC's public health partners and professionals in other Federal agencies, health departments, and academic institutions.

[6] *HIV/AIDS Surveillance Report* (December 2002, Vol.14).

Social Security records on HIV impairments show that by the end of 2002, there were nearly 98,500 workers receiving DI benefits—with approximately 10,500 becoming newly entitled in that year[7]—and roughly 72,000 individuals receiving SSI benefits.[8] Over the 10-year period covered by this study (1992-2001), approximately 204,100 HIV beneficiaries were terminated from the DI and SSI rolls as a result of death.

Results found in this study reflect DI (worker only) and SSI disability experience. We caution against viewing these results as a proxy for the HIV/AIDS mortality of the population being monitored by CDC. Only a fraction of those diagnosed with the HIV infection or full-blown AIDS actually become eligible for DI or SSI benefits. Many remain in the work force for extended periods of time, delaying, perhaps indefinitely, pursuit of disability benefits. For those who attain beneficiary status—and subsequently come under observation—the infection has progressed to the point of being disabling. Consequently, the make-up of the HIV population that is the basis for this study is quite different from the overall AIDS population tracked by CDC. Furthermore, the primary variable of interest for this mortality study is duration since becoming entitled to disability benefits. The time of initial diagnosis of HIV may not be known, and therefore the amount of time from onset of the infection to death cannot be measured.

As mentioned earlier, the expansion of the guidelines in 1990 more clearly defined the aspects of disability for individuals who had HIV, but had not progressed to the point of having AIDS or showed other severe manifestations of the infection.[9] For purposes of this study, HIV infection must be present and would be a contributing factor (if not the primary reason) for a favorable disability determination.

The main section of this study presents HIV mortality experience for the DI and SSI rolls over the period 1997-2001. For comparison, similar actuarial tables are provided in appendix A for 1992-96. Dramatic differences in mortality exist between the two 5-year periods. Among male beneficiaries in early durations, HIV mortality for 1997-2001 ranges from 30-50 percent of HIV mortality for 1992-96. Mortality improvements in later durations are less dramatic, but still significant, ranging from 50-75 percent of the earlier period. A similar comparison for females shows mortality for 1997-2001 is 40-60 percent of the previous period in early durations, and 60-80 percent in later durations.

[7] Totals include beneficiaries concurrently entitled to DI and SSI benefits, but do not include beneficiaries entitled to SSI only.

[8] Recipients include roughly 30 percent concurrently entitled to DI and SSI benefits, as well as some Federally administered State Supplementation only recipients.

[9] A group of common complications found in early stage HIV infection was categorized as AIDS-Related Complex. Individuals may have exhibited serious impairments that were reasonably assumed to be related to the infection, but did not have a definitively diagnosed case of AIDS. Symptoms include unexplained chronic deficiency of white blood cells, poorly functioning lymphatic system, fungus infection of the mouth, herpes, recurrent fever, prolonged diarrhea, or presence of HIV antibodies.

Much of the decline in mortality experience among DI and SSI recipients appears to be consistent with the wider use of HAART. To a lesser extent, the improvement may also be the result of differences in the composition of the rolls between the two periods. Over the period 1992-96, the number of individuals that appeared on the disability rolls with HIV as the *primary* reason for impairment was greater than those for whom HIV was the *secondary* reason by a ratio of 10-to-1. During 1997-2001, this ratio had dropped to less than 7-to-1. Furthermore, the ratio of *symptomatic* HIV cases to *asymptomatic* HIV cases[10] fell from roughly 6-to-1 in the earlier period, to 4-to-1 in the later period. Data suggest that cases having HIV impairment as the secondary diagnosis rather than the primary diagnosis, or an asymptomatic HIV diagnosis rather than symptomatic HIV diagnosis, exhibit inherently lower mortality. Consequently, a relatively higher concentration of lower-mortality individuals on the rolls contributes to lower overall mortality.

Tables 1A and **1B** show select-and-ultimate probabilities of death for male and female HIV disabled beneficiaries, by *select age* (that is, age at entitlement/eligibility to disability benefits) and duration since selection. Data reflect the combined actual experience of the DI and SSI rolls from January 1, 1997 through December 31, 2001. The probability of death among HIV beneficiaries is generally highest within the first several durations, then typically decreases in later durations. In comparing HIV mortality to general disability mortality, we see several common characteristics found in the overall disability population do not necessarily hold for HIV experience.[11] Deviations may be due to uncertainty over the length of time individuals have been infected, and the degree of therapy received. Certain characteristics generally seen in mortality patterns in the overall disability population appear to be less influential in the HIV disability population. These include:

- Gender differences—the probability of death for females exceeds that for males in less than 3 percent of all attained ages in the general disability population. This phenomenon occurs roughly 20 percent of the time in the HIV disability population, often at younger select ages and either very early or very late durations.
- General demographic factors—such as age of the beneficiary—would normally play a more dominant role in determining mortality for later durations. The general disability population exhibits a smoother progression of death probabilities across durations; whereas the HIV population shows greater fluctuation from one duration to the next.

[10] See discussion in appendix B for explanation of these terms.

[11] Findings are based on comparisons with overall disability mortality as discussed in Actuarial Study No. 118: *Social Security Disability Insurance Program Worker Experience* (Zayatz, June 2005).

Over the period 1997-2001, male HIV mortality ranges from one-and-a-half to three times that of overall disability mortality for early durations, and up to four times as high for later durations. Female HIV mortality can be three to six times as high as overall disability mortality over the same period. Several unique circumstances were encountered in the data that affect mortality estimates. These include death within the disability waiting period, and cases where HIV is present but is not material to benefit allowance. These and other data considerations are discussed in appendix B.

A *survival table* is a concise way of representing the probabilities of a particular population living to a particular age. **Tables 2A** and **2B** show the progression of a series of cohorts—each for a given select age—reflecting the probabilities of death shown in tables 1A and 1B. See appendix B for details on table construction and usage.

Tables 3A and **3B** show the expected future lifetime of male and female HIV disabled beneficiaries. Females have a higher future lifetime than males. As with general disability mortality, HIV beneficiaries often exhibit a shorter life expectancy in the first several years of entitlement than in later durations. This is due to higher mortality in those years.

Tables 4 and **5** show *aggregate* probability of death and expected future lifetime, by *select* and *attained* ages. Probabilities are exposure-weighted averages of those found in tables 1A and 1B. They represent the average probability of death, within one year, for those originally entitled to disability benefits at a particular select age (table 4), or those entitled to disability benefits who have attained a particular age (table 5). Similarly, aggregate future lifetime represents the life expectancy for those of a particular select or attained age. These values are exposure-weighted averages of the select-and-ultimate future lifetimes shown in tables 3A and 3B.

Table 6 shows aggregate results based on years since selection, or *duration*. Probabilities are based on aggregate counts of exposure and deaths across all select ages, and represent the average probability of death within the next year of entitlement to disability benefits. Aggregate future lifetime represents the average life expectancy for all those who have been entitled to disability benefits for the stated number of years.

Tables 7A and **7B** show select-and-ultimate probabilities of death for HIV disabled beneficiaries by select age and duration. These tables are similar to tables 1A and 1B, however they reflect only the experience of the DI rolls. As such, beneficiaries may be concurrently eligible for DI and SSI benefits, but those eligible for SSI only are not considered.

When comparing tables 1A-1B to tables 7A-7B, we observe that the mortality of the combined DI and SSI rolls is higher than that of the DI rolls in roughly two-thirds of all attained ages; this proportion increases to roughly three-fourths when considering only durations 5 and later. This indicates somewhat higher mortality among those receiving only SSI benefits (whose experience is included in tables 1A-1B, but not in tables 7A-7B) than among DI beneficiaries, particularly for older attained ages. Reasons for higher SSI mortality may be related to the means-tested nature of the SSI program itself. By definition, SSI-only recipients are of lesser economic means and typically uninsured for DI benefits and, hence, ineligible for any Medicare benefits that are available under the DI program. Generally, SSI recipients are categorically eligible for Medicaid. However, prior to SSI eligibility, medical assisitance through Federal or State sponsored programs may not have been available. The lack of medical treatment—both prior to and during eligibility—may contribute to higher mortality rates.

Similar tables for combined experience from January 1, 1992 through December 31, 1996 are presented in appendix A.

Table 1A.—Male HIV Disabled Beneficiaries

Probability of Death

(1997-2001 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.072424	0.061970	0.049041	0.044395	0.039615	0.062552	0.050563	0.057413	0.046820	0.039698	0.016877	28
19	0.067844	0.068649	0.060102	0.051266	0.048380	0.064879	0.054528	0.056563	0.050111	0.039005	0.022984	29
20	0.064963	0.073503	0.071242	0.059366	0.055251	0.065836	0.056733	0.056155	0.052490	0.038579	0.028405	30
21	0.066546	0.078799	0.081851	0.067355	0.060825	0.063942	0.057519	0.056165	0.054115	0.040173	0.033340	31
22	0.072324	0.086560	0.089234	0.073580	0.065340	0.063329	0.056180	0.056407	0.057050	0.042813	0.038440	32
23	0.080407	0.091846	0.093061	0.077980	0.068095	0.060679	0.052140	0.058231	0.061400	0.046054	0.043497	33
24	0.088382	0.091723	0.094113	0.079606	0.071543	0.058835	0.048438	0.060613	0.063335	0.048721	0.045157	34
25	0.095077	0.088169	0.091669	0.078076	0.071820	0.060192	0.047746	0.060269	0.060925	0.052236	0.046840	35
26	0.098407	0.084635	0.087606	0.077251	0.068332	0.060435	0.051807	0.058921	0.056224	0.054558	0.050940	36
27	0.099076	0.084135	0.086235	0.077844	0.065436	0.059663	0.056796	0.056627	0.053400	0.054879	0.052618	37
28	0.096614	0.081876	0.085671	0.076535	0.067543	0.061464	0.058762	0.055881	0.052606	0.056308	0.054454	38
29	0.095514	0.080739	0.082391	0.073460	0.065730	0.059894	0.059900	0.054818	0.051790	0.057995	0.053766	39
30	0.098075	0.082003	0.080945	0.070926	0.066397	0.060144	0.058286	0.052993	0.050554	0.057884	0.054635	40
31	0.105141	0.080829	0.079860	0.067207	0.066918	0.060372	0.055105	0.052590	0.052181	0.056308	0.059580	41
32	0.106784	0.081482	0.078830	0.070700	0.066557	0.058501	0.056156	0.051882	0.054628	0.054098	0.060942	42
33	0.102632	0.080881	0.077698	0.071781	0.066740	0.061156	0.061485	0.052391	0.061413	0.052325	0.060479	43
34	0.100541	0.080806	0.079623	0.069893	0.067752	0.066658	0.061722	0.054631	0.063452	0.055974	0.061777	44
35	0.099457	0.079650	0.079024	0.072943	0.072329	0.069893	0.058148	0.057933	0.062774	0.062264	0.064911	45
36	0.101599	0.078694	0.076795	0.072894	0.070951	0.070526	0.061498	0.061874	0.059468	0.069090	0.067332	46
37	0.104829	0.079212	0.077374	0.070885	0.073004	0.066536	0.063171	0.063272	0.061576	0.075098	0.068115	47
38	0.109102	0.083811	0.080687	0.072044	0.070583	0.062784	0.066599	0.065365	0.065264	0.075316	0.068800	48
39	0.113059	0.084416	0.081142	0.071814	0.070783	0.066801	0.069815	0.067368	0.068998	0.073892	0.069489	49
40	0.118663	0.084208	0.083062	0.072838	0.073169	0.070082	0.070110	0.068395	0.070498	0.071233	0.069198	50
41	0.118099	0.082197	0.081002	0.075125	0.073089	0.074186	0.069905	0.069130	0.072888	0.072268	0.070891	51
42	0.114107	0.081139	0.078327	0.074788	0.075417	0.078234	0.069649	0.070990	0.078059	0.075851	0.073921	52
43	0.114507	0.084619	0.079357	0.078941	0.077719	0.076880	0.073473	0.073125	0.079232	0.079797	0.071723	53
44	0.115781	0.086245	0.077773	0.081938	0.080629	0.076451	0.075154	0.075229	0.079684	0.083732	0.068283	54
45	0.118907	0.088921	0.077261	0.081640	0.084272	0.076000	0.074770	0.076949	0.079540	0.086777	0.063994	55
46	0.123508	0.092586	0.078050	0.079662	0.080987	0.074157	0.075519	0.078654	0.079634	0.086510	0.061175	56
47	0.130179	0.094964	0.078655	0.078263	0.075861	0.071391	0.074388	0.077342	0.079527	0.082762	0.061600	57
48	0.133785	0.093103	0.078087	0.077062	0.073338	0.070598	0.071527	0.076444	0.078246	0.079950	0.065649	58
49	0.134264	0.091728	0.076766	0.072519	0.073124	0.068314	0.070221	0.075524	0.078759	0.081462	0.070128	59
50	0.134128	0.090194	0.081422	0.073132	0.075903	0.068483	0.074628	0.077927	0.079951	0.086466	0.072926	60
51	0.136355	0.091824	0.086613	0.079117	0.080415	0.073393	0.081526	0.080458	0.082951	0.091564	0.074809	61
52	0.131513	0.092727	0.091178	0.081191	0.082324	0.081563	0.087694	0.083939	0.084703	0.093596	0.075441	62
53	0.127985	0.089593	0.093635	0.083973	0.084930	0.090748	0.093568	0.087702	0.086421	0.095216	0.078608	63
54	0.123458	0.086888	0.092847	0.084004	0.086900	0.099208	0.095610	0.091650	0.086957	0.095312	0.081749	64
55	0.119988	0.085150	0.090099	0.084302	0.088948	0.103877	0.098470	0.094977	0.086312	0.093314	0.083978	65
56	0.117971	0.085425	0.090823	0.082740	0.087678	0.106907	0.099372	0.094788	0.087054	0.089746	0.085838	66
57	0.118847	0.086343	0.094964	0.081157	0.088624	0.104431	0.098312	0.093651	0.088396	0.087239	0.085478	67
58	0.120873	0.088290	0.099041	0.077703	0.088823	0.099500	0.098529	0.091583	0.089062	0.085175	0.084091	68
59	0.126070	0.092257	0.102476	0.079562	0.088125	0.093112	0.099982	0.088988	0.088200	0.083563	0.083550	69
60	0.134891	0.100136	0.106536	0.088520	0.088327	0.089833	0.102695	0.086674	0.085556	0.082145	0.085288	70
61	0.150343	0.109907	0.110088	0.101728	0.091308	0.090793	0.103014	0.084766	0.082063	0.081182	0.090119	71
62	0.165753	0.122347	0.116606	0.113242	0.099408	0.093314	0.101613	0.082816	0.077225	0.079324	0.098050	72
63	0.180508	0.136352	0.123795	0.122920	0.108350	0.096861	0.098319	0.081047	0.072080	0.077168	0.107429	73
64	0.195326	0.153054	0.128732	0.132037	0.117092	0.101297	0.094211	0.078433	0.066512	0.075118	0.117143	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Table 1B.—Female HIV Disabled Beneficiaries

Probability of Death

(1997-2001 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.064609	0.081446	0.107080	0.089289	0.059634	0.059502	0.042750	0.027047	0.016714	0.020978	0.033417	28
19	0.068166	0.081637	0.107334	0.083497	0.060611	0.060633	0.039327	0.029339	0.024983	0.028243	0.036000	29
20	0.070701	0.080610	0.106104	0.081262	0.061100	0.061638	0.038150	0.032900	0.032568	0.034729	0.039513	30
21	0.073713	0.079308	0.103390	0.080575	0.063096	0.060396	0.038811	0.038186	0.037934	0.038994	0.042369	31
22	0.078688	0.078482	0.097684	0.077902	0.066505	0.058778	0.040238	0.043700	0.041459	0.042491	0.043498	32
23	0.084170	0.078733	0.088757	0.073580	0.068291	0.056541	0.041704	0.047512	0.045085	0.044523	0.044505	33
24	0.087715	0.079375	0.081797	0.068049	0.067240	0.055142	0.045743	0.048720	0.049416	0.045018	0.047132	34
25	0.089063	0.083070	0.076883	0.064829	0.065806	0.054546	0.050215	0.050698	0.051643	0.046113	0.049899	35
26	0.090768	0.091103	0.075759	0.065604	0.060624	0.056111	0.051895	0.052628	0.052079	0.048499	0.050658	36
27	0.093297	0.098989	0.077909	0.067627	0.055029	0.058984	0.052883	0.053473	0.052439	0.048166	0.050403	37
28	0.095917	0.102971	0.082297	0.069646	0.052707	0.061202	0.053119	0.053051	0.052075	0.047330	0.047794	38
29	0.097139	0.101274	0.088516	0.068182	0.051588	0.060968	0.051537	0.053394	0.052320	0.050531	0.044905	39
30	0.099584	0.094261	0.088945	0.065757	0.053798	0.059035	0.049459	0.054128	0.052751	0.058151	0.043432	40
31	0.101347	0.088192	0.083976	0.065977	0.057638	0.059843	0.051498	0.055630	0.053794	0.064226	0.042132	41
32	0.099489	0.084070	0.080952	0.068760	0.061200	0.059402	0.054064	0.055611	0.056040	0.065629	0.042781	42
33	0.099569	0.080858	0.081193	0.071465	0.064705	0.059065	0.055694	0.055544	0.059571	0.066668	0.045161	43
34	0.098859	0.080301	0.079025	0.070948	0.066658	0.061882	0.056224	0.056015	0.062403	0.066524	0.047116	44
35	0.091966	0.082907	0.077817	0.072690	0.069538	0.066213	0.059598	0.058221	0.064705	0.064758	0.051432	45
36	0.090119	0.081516	0.076310	0.077584	0.072764	0.068850	0.061571	0.063993	0.063974	0.064026	0.056913	46
37	0.091585	0.079324	0.075935	0.080498	0.075101	0.069946	0.063272	0.064830	0.060298	0.063702	0.062123	47
38	0.088529	0.081264	0.075748	0.081292	0.074179	0.071191	0.065125	0.061153	0.059719	0.060195	0.064443	48
39	0.087623	0.084262	0.076614	0.081697	0.071131	0.071696	0.062474	0.059553	0.063029	0.056903	0.061597	49
40	0.090619	0.086234	0.074260	0.080456	0.071694	0.070133	0.063961	0.060622	0.066119	0.055102	0.055380	50
41	0.095149	0.087459	0.075799	0.077798	0.074393	0.067571	0.068106	0.065431	0.068019	0.056343	0.052187	51
42	0.101415	0.088470	0.074959	0.074104	0.077246	0.067779	0.070510	0.070491	0.066918	0.059821	0.048584	52
43	0.102957	0.088830	0.073037	0.069707	0.079133	0.066853	0.071424	0.072149	0.064378	0.063602	0.045681	53
44	0.100592	0.089584	0.072975	0.068015	0.080071	0.066438	0.072174	0.072503	0.064175	0.065726	0.045348	54
45	0.095224	0.089570	0.072805	0.069323	0.078760	0.066862	0.075563	0.071739	0.066457	0.066811	0.046353	55
46	0.091817	0.091718	0.076051	0.071288	0.075088	0.066578	0.075915	0.070091	0.070012	0.068198	0.047691	56
47	0.090380	0.091443	0.077692	0.070759	0.071480	0.065435	0.070494	0.067149	0.072545	0.068478	0.047835	57
48	0.092084	0.088144	0.075904	0.068640	0.069463	0.065347	0.064955	0.063106	0.073622	0.067603	0.045480	58
49	0.095573	0.083207	0.074178	0.067002	0.070458	0.066865	0.061957	0.060610	0.074166	0.067653	0.042944	59
50	0.101397	0.077982	0.070709	0.065399	0.072019	0.066741	0.061108	0.058583	0.074452	0.068742	0.039603	60
51	0.106524	0.075767	0.067611	0.066051	0.072598	0.066673	0.063299	0.059057	0.075402	0.071040	0.042245	61
52	0.108083	0.075267	0.066383	0.069576	0.071943	0.068205	0.067772	0.061808	0.076529	0.073511	0.043739	62
53	0.105394	0.077580	0.067336	0.073762	0.070900	0.072421	0.073737	0.065454	0.076328	0.073577	0.047825	63
54	0.102870	0.078956	0.070270	0.077181	0.070693	0.077537	0.077921	0.067845	0.074594	0.071855	0.049742	64
55	0.099982	0.080290	0.074172	0.077992	0.072202	0.080911	0.078285	0.068858	0.071920	0.069471	0.053064	65
56	0.097731	0.079866	0.075072	0.077885	0.075026	0.081826	0.075780	0.069017	0.068537	0.066147	0.055033	66
57	0.096656	0.078204	0.073298	0.075399	0.079482	0.082226	0.071928	0.068437	0.065599	0.062524	0.058884	67
58	0.095804	0.073421	0.069982	0.072067	0.083763	0.082068	0.067703	0.066781	0.063122	0.058698	0.062342	68
59	0.093509	0.068118	0.067241	0.068046	0.084218	0.079799	0.063335	0.064588	0.060739	0.055098	0.065093	69
60	0.089805	0.063518	0.066461	0.064342	0.081768	0.073737	0.058867	0.061245	0.057822	0.056326	0.067155	70
61	0.104964	0.062520	0.066200	0.062518	0.075597	0.065210	0.055004	0.057530	0.059659	0.062082	0.071765	71
62	0.110186	0.068013	0.066576	0.061814	0.067271	0.056756	0.056501	0.057736	0.064411	0.067667	0.077636	72
63	0.132043	0.080614	0.068587	0.061663	0.062279	0.060154	0.063760	0.069208	0.069545	0.072625	0.080153	73
64	0.156291	0.088404	0.071025	0.065189	0.064846	0.068735	0.073385	0.072524	0.072859	0.084538	0.085617	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional graduation method.

Table 2A.—Male HIV Disabled Beneficiaries

Survival Table

(1997-2001 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	100,000	92,758	87,010	82,743	79,070	75,938	71,188	67,589	63,709	60,726	58,315	28
19	102,206	95,272	88,732	83,399	79,123	75,295	70,410	66,571	62,806	59,659	57,331	29
20	103,400	96,683	89,577	83,195	78,256	73,932	69,065	65,147	61,489	58,261	56,013	30
21	104,099	97,172	89,515	82,188	76,652	71,990	67,387	63,511	59,944	56,700	54,422	31
22	104,559	96,997	88,601	80,695	74,757	69,872	65,447	61,770	58,286	54,961	52,608	32
23	103,533	95,208	86,464	78,418	72,303	67,380	63,291	59,991	56,498	53,029	50,586	33
24	100,702	91,802	83,382	75,535	69,522	64,548	60,750	57,807	54,303	50,864	48,386	34
25	96,241	87,091	79,412	72,132	66,500	61,724	58,009	55,239	51,910	48,747	46,201	35
26	90,935	81,986	75,047	68,472	63,182	58,865	55,307	52,442	49,352	46,577	44,037	36
27	85,925	77,412	70,899	64,785	59,742	55,833	52,502	49,520	46,716	44,221	41,794	37
28	81,316	73,460	67,445	61,667	56,947	53,101	49,837	46,908	44,287	41,957	39,595	38
29	75,974	68,717	63,169	57,964	53,706	50,176	47,171	44,345	41,914	39,743	37,439	39
30	71,589	64,568	59,273	54,475	50,611	47,251	44,409	41,821	39,605	37,603	35,426	40
31	67,575	60,470	55,582	51,143	47,706	44,514	41,827	39,522	37,444	35,490	33,491	41
32	63,767	56,958	52,317	48,193	44,786	41,805	39,359	37,149	35,222	33,298	31,496	42
33	60,435	54,232	49,846	45,973	42,673	39,825	37,389	35,090	33,252	31,210	29,577	43
34	57,537	51,752	47,570	43,782	40,722	37,963	35,432	33,245	31,429	29,435	27,788	44
35	54,756	49,310	45,382	41,796	38,747	35,944	33,432	31,488	29,664	27,802	26,071	45
36	51,696	46,444	42,789	39,503	36,623	34,025	31,625	29,680	27,844	26,188	24,379	46
37	48,826	43,708	40,246	37,132	34,500	31,981	29,853	27,967	26,197	24,584	22,738	47
38	46,330	41,275	37,816	34,765	32,260	29,983	28,101	26,230	24,515	22,915	21,189	48
39	43,923	38,957	35,668	32,774	30,420	28,267	26,379	24,537	22,884	21,305	19,731	49
40	41,512	36,586	33,505	30,722	28,484	26,400	24,550	22,829	21,268	19,769	18,360	50
41	38,872	34,281	31,463	28,914	26,742	24,787	22,948	21,344	19,868	18,420	17,090	51
42	36,447	32,288	29,668	27,344	25,299	23,391	21,561	20,059	18,635	17,180	15,878	52
43	34,533	30,579	27,991	25,770	23,736	21,891	20,208	18,723	17,354	15,979	14,704	53
44	32,583	28,811	26,326	24,279	22,290	20,493	18,926	17,504	16,187	14,897	13,649	54
45	30,777	27,117	24,706	22,797	20,936	19,172	17,715	16,390	15,129	13,926	12,717	55
46	28,947	25,372	23,023	21,226	19,535	17,953	16,622	15,367	14,158	13,031	11,903	56
47	27,014	23,497	21,266	19,593	18,060	16,690	15,498	14,345	13,236	12,183	11,175	57
48	25,051	21,700	19,680	18,143	16,745	15,517	14,422	13,390	12,366	11,398	10,487	58
49	23,170	20,059	18,219	16,820	15,600	14,459	13,471	12,525	11,579	10,667	9,799	59
50	22,007	19,055	17,336	15,924	14,759	13,639	12,705	11,757	10,841	9,974	9,112	60
51	21,356	18,444	16,750	15,299	14,089	12,956	12,005	11,026	10,139	9,298	8,447	61
52	20,325	17,652	16,015	14,555	13,373	12,272	11,271	10,283	9,420	8,622	7,815	62
53	19,274	16,807	15,301	13,868	12,703	11,624	10,569	9,580	8,740	7,985	7,225	63
54	17,934	15,720	14,354	13,021	11,927	10,891	9,811	8,873	8,060	7,359	6,657	64
55	16,514	14,533	13,296	12,098	11,078	10,093	9,045	8,154	7,380	6,743	6,113	65
56	15,080	13,301	12,165	11,060	10,145	9,256	8,266	7,445	6,739	6,152	5,600	66
57	13,776	12,139	11,091	10,038	9,223	8,406	7,528	6,788	6,152	5,608	5,119	67
58	12,552	11,035	10,061	9,065	8,361	7,618	6,860	6,184	5,618	5,118	4,681	68
59	11,545	10,090	9,159	8,220	7,566	6,899	6,257	5,631	5,130	4,678	4,287	69
60	10,858	9,393	8,452	7,552	6,883	6,275	5,711	5,125	4,681	4,281	3,929	70
61	10,392	8,830	7,860	6,995	6,283	5,709	5,191	4,656	4,261	3,911	3,594	71
62	9,974	8,321	7,303	6,451	5,720	5,151	4,670	4,195	3,848	3,551	3,270	72
63	9,489	7,776	6,716	5,885	5,162	4,603	4,157	3,748	3,444	3,196	2,949	73
64	8,931	7,187	6,087	5,303	4,603	4,064	3,652	3,308	3,049	2,846	2,632	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $l_{[x]}$ at duration 0 represents the assumed number of lives originally entitled to disability benefits at select age [*x*]; the value $l_{[x]+t}$ at duration $t > 0$ represents the number of lives remaining from the original $l_{[x]}$ who have attained age [*x*]+*t*. Lives are decremented using probabilities from **table 1A**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table 2B.—Female HIV Disabled Beneficiaries

Survival Table

(1997-2001 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	100,000	93,539	85,921	76,721	69,871	65,704	61,794	59,152	57,552	56,590	55,403	28
19	98,108	91,420	83,957	74,946	68,688	64,525	60,613	58,229	56,521	55,109	53,552	29
20	96,135	89,338	82,136	73,421	67,455	63,333	59,429	57,162	55,281	53,481	51,624	30
21	93,733	86,824	79,938	71,673	65,898	61,740	58,011	55,760	53,631	51,597	49,584	31
22	90,819	83,673	77,106	69,574	64,154	59,887	56,367	54,099	51,735	49,590	47,483	32
23	87,104	79,772	73,491	66,968	62,040	57,803	54,535	52,261	49,778	47,534	45,418	33
24	83,142	75,849	69,828	64,116	59,753	55,735	52,662	50,253	47,805	45,443	43,397	34
25	79,606	72,516	66,492	61,380	57,401	53,624	50,699	48,153	45,712	43,351	41,352	35
26	76,638	69,682	63,334	58,536	54,696	51,380	48,497	45,980	43,560	41,291	39,289	36
27	73,861	66,970	60,341	55,640	51,877	49,022	46,130	43,691	41,355	39,186	37,299	37
28	71,036	64,222	57,609	52,868	49,186	46,594	43,742	41,418	39,221	37,179	35,419	38
29	68,018	61,411	55,192	50,307	46,877	44,459	41,748	39,596	37,482	35,521	33,726	39
30	64,977	58,506	52,991	48,278	45,103	42,677	40,158	38,172	36,106	34,201	32,212	40
31	62,549	56,210	51,253	46,949	43,851	41,324	38,851	36,850	34,800	32,928	30,813	41
32	60,094	54,115	49,566	45,554	42,422	39,826	37,460	35,435	33,464	31,589	29,515	42
33	58,080	52,297	48,068	44,165	41,009	38,356	36,091	34,081	32,188	30,271	28,252	43
34	55,719	50,211	46,179	42,530	39,513	36,879	34,597	32,652	30,823	28,900	26,976	44
35	53,626	48,694	44,657	41,182	38,188	35,532	33,179	31,202	29,385	27,484	25,705	45
36	51,539	46,894	43,071	39,784	36,697	34,027	31,684	29,733	27,830	26,050	24,383	46
37	48,806	44,336	40,819	37,719	34,683	32,078	29,834	27,946	26,134	24,558	22,995	47
38	45,475	41,449	38,081	35,196	32,335	29,936	27,805	25,994	24,404	22,947	21,566	48
39	42,391	38,677	35,418	32,704	30,032	27,896	25,896	24,278	22,832	21,393	20,176	49
40	39,963	36,342	33,208	30,742	28,269	26,242	24,402	22,841	21,456	20,037	18,933	50
41	38,442	34,784	31,742	29,336	27,054	25,041	23,349	21,759	20,335	18,952	17,884	51
42	37,060	33,302	30,356	28,081	26,000	23,992	22,366	20,789	19,324	18,031	16,951	52
43	35,274	31,642	28,831	26,725	24,862	22,895	21,364	19,838	18,407	17,222	16,127	53
44	33,666	30,279	27,566	25,554	23,816	21,909	20,453	18,977	17,601	16,471	15,390	54
45	32,163	29,100	26,494	24,565	22,862	21,061	19,653	18,168	16,865	15,744	14,692	55
46	30,790	27,963	25,398	23,466	21,793	20,157	18,815	17,387	16,168	15,036	14,011	56
47	28,979	26,360	23,950	22,089	20,526	19,059	17,812	16,556	15,444	14,324	13,343	57
48	27,094	24,599	22,431	20,728	19,305	17,964	16,790	15,699	14,708	13,625	12,705	58
49	25,663	23,210	21,279	19,701	18,381	17,086	15,944	14,956	14,050	13,008	12,127	59
50	24,445	21,966	20,253	18,821	17,590	16,323	15,234	14,303	13,465	12,463	11,606	60
51	23,655	21,135	19,534	18,213	17,010	15,775	14,723	13,791	12,977	11,999	11,146	61
52	23,025	20,536	18,990	17,729	16,495	15,308	14,264	13,297	12,475	11,520	10,675	62
53	22,431	20,067	18,510	17,264	15,991	14,857	13,781	12,765	11,929	11,018	10,208	63
54	21,664	19,435	17,900	16,642	15,358	14,272	13,165	12,139	11,315	10,471	9,720	64
55	20,684	18,616	17,121	15,851	14,615	13,560	12,463	11,487	10,696	9,927	9,237	65
56	19,434	17,535	16,135	14,924	13,762	12,729	11,687	10,801	10,056	9,367	8,747	66
57	18,107	16,357	15,078	13,973	12,919	11,892	10,914	10,129	9,436	8,817	8,266	67
58	16,673	15,076	13,969	12,991	12,055	11,045	10,139	9,453	8,822	8,265	7,779	68
59	15,158	13,741	12,805	11,944	11,131	10,194	9,381	8,787	8,219	7,720	7,294	69
60	13,709	12,478	11,685	10,908	10,206	9,371	8,680	8,169	7,669	7,226	6,819	70
61	12,758	11,419	10,705	9,996	9,371	8,663	8,098	7,653	7,213	6,783	6,361	71
62	11,918	10,605	9,884	9,226	8,656	8,074	7,616	7,186	6,771	6,335	5,905	72
63	11,785	10,229	9,404	8,759	8,219	7,707	7,243	6,781	6,312	5,873	5,447	73
64	11,808	9,963	9,082	8,437	7,887	7,376	6,869	6,365	5,903	5,473	5,010	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $l_{[x]}$ at duration 0 represents the assumed number of lives originally entitled to disability benefits at select age [*x*]; the value $l_{[x]+t}$ at duration $t > 0$ represents the number of lives remaining from the original $l_{[x]}$ who have attained age [*x*]+*t*. Lives are decremented using probabilities from **table 1B**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table 3A.—Male HIV Disabled Beneficiaries

Expected Future Lifetime

(1997-2001 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	18.20	18.58	18.77	18.72	18.56	18.31	18.50	18.45	18.55	18.43	18.18	28
19	17.25	17.47	17.72	17.82	17.76	17.64	17.82	17.82	17.86	17.78	17.48	29
20	16.45	16.56	16.83	17.08	17.13	17.10	17.27	17.28	17.28	17.21	16.88	30
21	15.70	15.79	16.09	16.48	16.64	16.68	16.79	16.78	16.75	16.68	16.36	31
22	14.98	15.11	15.50	15.97	16.20	16.29	16.36	16.31	16.25	16.20	15.91	32
23	14.44	14.66	15.09	15.58	15.86	15.98	15.98	15.83	15.78	15.78	15.52	33
24	14.09	14.41	14.81	15.30	15.58	15.74	15.69	15.46	15.43	15.44	15.20	34
25	13.93	14.34	14.68	15.11	15.34	15.49	15.45	15.20	15.14	15.09	14.90	35
26	13.88	14.34	14.62	14.97	15.18	15.26	15.21	15.01	14.92	14.78	14.61	36
27	13.80	14.26	14.53	14.85	15.06	15.08	15.01	14.88	14.74	14.55	14.36	37
28	13.72	14.13	14.35	14.65	14.82	14.86	14.80	14.69	14.53	14.31	14.13	38
29	13.75	14.15	14.35	14.59	14.71	14.71	14.62	14.51	14.33	14.08	13.92	39
30	13.66	14.09	14.30	14.52	14.59	14.59	14.49	14.36	14.13	13.86	13.68	40
31	13.53	14.06	14.26	14.45	14.46	14.46	14.35	14.16	13.92	13.66	13.44	41
32	13.40	13.94	14.13	14.30	14.35	14.34	14.20	14.01	13.75	13.52	13.26	42
33	13.27	13.73	13.89	14.02	14.06	14.03	13.91	13.79	13.53	13.38	13.09	43
34	13.08	13.48	13.63	13.76	13.76	13.72	13.67	13.53	13.29	13.15	12.90	44
35	12.89	13.25	13.36	13.46	13.48	13.49	13.47	13.27	13.05	12.90	12.72	45
36	12.75	13.13	13.21	13.27	13.28	13.25	13.22	13.05	12.88	12.66	12.57	46
37	12.59	13.01	13.08	13.14	13.10	13.09	12.99	12.83	12.67	12.47	12.44	47
38	12.36	12.81	12.93	13.02	13.00	12.95	12.78	12.66	12.51	12.34	12.31	48
39	12.14	12.63	12.75	12.83	12.78	12.72	12.59	12.50	12.37	12.25	12.18	49
40	11.93	12.47	12.57	12.67	12.62	12.58	12.49	12.39	12.27	12.16	12.05	50
41	11.84	12.36	12.42	12.48	12.45	12.39	12.34	12.23	12.10	12.02	11.91	51
42	11.76	12.21	12.25	12.25	12.20	12.15	12.14	12.01	11.89	11.85	11.78	52
43	11.54	11.97	12.03	12.03	12.02	11.99	11.94	11.85	11.75	11.71	11.69	53
44	11.37	11.79	11.86	11.82	11.83	11.82	11.76	11.67	11.58	11.54	11.55	54
45	11.18	11.62	11.71	11.65	11.64	11.66	11.58	11.47	11.39	11.33	11.36	55
46	11.02	11.50	11.62	11.56	11.52	11.49	11.37	11.26	11.17	11.10	11.10	56
47	10.89	11.44	11.59	11.54	11.47	11.37	11.21	11.07	10.96	10.86	10.79	57
48	10.81	11.41	11.53	11.46	11.38	11.24	11.05	10.87	10.72	10.59	10.47	58
49	10.77	11.36	11.46	11.37	11.22	11.07	10.84	10.62	10.45	10.30	10.17	59
50	10.53	11.08	11.13	11.08	10.91	10.77	10.52	10.33	10.16	10.00	9.90	60
51	10.13	10.65	10.68	10.64	10.51	10.39	10.17	10.03	9.86	9.71	9.64	61
52	9.88	10.30	10.30	10.29	10.15	10.02	9.86	9.76	9.61	9.45	9.38	62
53	9.66	10.00	9.94	9.92	9.78	9.64	9.55	9.49	9.35	9.19	9.10	63
54	9.54	9.82	9.70	9.64	9.48	9.34	9.31	9.24	9.12	8.94	8.83	64
55	9.46	9.68	9.53	9.43	9.25	9.10	9.10	9.04	8.93	8.73	8.58	65
56	9.38	9.57	9.41	9.30	9.10	8.92	8.93	8.86	8.74	8.53	8.32	66
57	9.26	9.45	9.29	9.21	8.98	8.81	8.78	8.68	8.53	8.31	8.05	67
58	9.15	9.34	9.19	9.15	8.88	8.70	8.60	8.49	8.29	8.05	7.76	68
59	8.95	9.17	9.05	9.03	8.77	8.57	8.40	8.27	8.03	7.76	7.42	69
60	8.61	8.87	8.80	8.79	8.60	8.39	8.16	8.04	7.76	7.43	7.06	70
61	8.15	8.50	8.48	8.47	8.38	8.17	7.93	7.79	7.46	7.09	6.67	71
62	7.66	8.08	8.13	8.14	8.12	7.96	7.73	7.55	7.18	6.74	6.28	72
63	7.20	7.68	7.81	7.84	7.87	7.76	7.54	7.31	6.91	6.41	5.91	73
64	6.77	7.30	7.53	7.56	7.64	7.59	7.39	7.10	6.66	6.10	5.56	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $e_{[x]+t}$ at duration t represents the average number of years of life remaining for those originally entitled to disability benefits at select age [x] who have attained age [x]+t. Values are based on survivorship experience from **table 2A**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table 3B.—Female HIV Disabled Beneficiaries

Expected Future Lifetime

(1997-2001 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	17.82	18.02	18.57	19.74	20.62	20.90	21.19	21.12	20.69	20.03	19.45	28
19	17.46	17.70	18.23	19.36	20.08	20.34	20.62	20.45	20.05	19.55	19.11	29
20	17.12	17.38	17.86	18.92	19.55	19.79	20.06	19.83	19.49	19.13	18.80	30
21	16.82	17.12	17.55	18.52	19.10	19.35	19.56	19.33	19.08	18.81	18.55	31
22	16.59	16.96	17.37	18.19	18.69	18.98	19.14	18.92	18.76	18.55	18.35	32
23	16.48	16.95	17.35	17.99	18.38	18.70	18.79	18.58	18.48	18.33	18.16	33
24	16.42	16.95	17.37	17.87	18.14	18.41	18.46	18.32	18.23	18.15	17.99	34
25	16.30	16.85	17.33	17.73	17.93	18.16	18.17	18.11	18.05	18.00	17.85	35
26	16.09	16.64	17.26	17.63	17.84	17.95	17.99	17.95	17.92	17.88	17.76	36
27	15.83	16.41	17.16	17.56	17.80	17.81	17.89	17.87	17.85	17.81	17.68	37
28	15.60	16.21	17.01	17.49	17.76	17.72	17.85	17.82	17.79	17.74	17.59	38
29	15.47	16.08	16.83	17.42	17.66	17.59	17.70	17.64	17.60	17.55	17.45	39
30	15.40	16.04	16.66	17.24	17.42	17.38	17.44	17.32	17.28	17.22	17.25	40
31	15.25	15.91	16.40	16.86	17.02	17.03	17.08	16.98	16.95	16.89	17.01	41
32	15.11	15.73	16.13	16.50	16.68	16.74	16.76	16.69	16.65	16.60	16.74	42
33	14.89	15.48	15.80	16.15	16.36	16.45	16.45	16.39	16.33	16.33	16.46	43
34	14.74	15.30	15.59	15.88	16.06	16.17	16.20	16.14	16.07	16.10	16.22	44
35	14.55	14.97	15.28	15.53	15.71	15.84	15.93	15.91	15.86	15.93	15.99	45
36	14.35	14.73	14.99	15.19	15.42	15.59	15.71	15.71	15.75	15.79	15.83	46
37	14.27	14.66	14.88	15.06	15.33	15.54	15.67	15.69	15.75	15.73	15.76	47
38	14.33	14.68	14.93	15.11	15.41	15.60	15.76	15.82	15.82	15.79	15.77	48
39	14.38	14.71	15.02	15.23	15.54	15.69	15.86	15.89	15.86	15.89	15.82	49
40	14.33	14.71	15.05	15.22	15.50	15.66	15.81	15.85	15.84	15.93	15.83	50
41	14.09	14.52	14.87	15.05	15.27	15.46	15.54	15.64	15.70	15.81	15.73	51
42	13.85	14.35	14.70	14.85	14.99	15.21	15.28	15.40	15.53	15.60	15.57	52
43	13.74	14.26	14.61	14.72	14.78	15.01	15.05	15.17	15.31	15.33	15.34	53
44	13.63	14.09	14.43	14.53	14.55	14.78	14.79	14.90	15.03	15.03	15.05	54
45	13.51	13.88	14.19	14.27	14.29	14.47	14.48	14.62	14.71	14.72	14.74	55
46	13.34	13.64	13.97	14.07	14.12	14.22	14.20	14.33	14.37	14.41	14.43	56
47	13.31	13.59	13.90	14.03	14.06	14.11	14.06	14.09	14.06	14.13	14.13	57
48	13.33	13.63	13.90	14.00	14.00	14.01	13.95	13.89	13.79	13.85	13.81	58
49	13.23	13.58	13.76	13.83	13.78	13.79	13.74	13.62	13.46	13.50	13.45	59
50	13.08	13.49	13.59	13.59	13.51	13.52	13.45	13.29	13.09	13.10	13.03	60
51	12.78	13.25	13.29	13.22	13.12	13.11	13.01	12.85	12.63	12.62	12.54	61
52	12.44	12.88	12.89	12.77	12.69	12.64	12.53	12.40	12.18	12.15	12.08	62
53	12.08	12.44	12.45	12.31	12.25	12.15	12.06	11.98	11.78	11.72	11.61	63
54	11.77	12.06	12.05	11.92	11.88	11.74	11.69	11.63	11.44	11.33	11.16	64
55	11.52	11.75	11.73	11.63	11.57	11.43	11.39	11.32	11.12	10.94	10.72	65
56	11.38	11.56	11.52	11.41	11.33	11.21	11.16	11.04	10.82	10.58	10.29	66
57	11.28	11.43	11.36	11.22	11.09	11.01	10.95	10.76	10.51	10.21	9.86	67
58	11.25	11.39	11.25	11.06	10.88	10.83	10.75	10.49	10.21	9.86	9.45	68
59	11.29	11.40	11.20	10.97	10.73	10.67	10.56	10.24	9.91	9.52	9.04	69
60	11.35	11.42	11.16	10.92	10.63	10.54	10.34	9.95	9.57	9.12	8.64	70
61	11.11	11.36	11.08	10.83	10.52	10.34	10.03	9.58	9.13	8.68	8.22	71
62	10.86	11.14	10.92	10.66	10.33	10.04	9.62	9.16	8.69	8.26	7.82	72
63	10.15	10.62	10.51	10.25	9.89	9.51	9.09	8.67	8.28	7.86	7.44	73
64	9.40	10.05	9.98	9.70	9.35	8.96	8.58	8.22	7.83	7.40	7.04	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $e_{[x]+t}$ at duration t represents the average number of years of life remaining for those originally entitled to disability benefits at select age [x] who have attained age [x]+t. Values are based on survivorship experience from **table 2B**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table 4.—HIV Disabled Beneficiaries
Aggregate Probability of Death and *Expected Future Lifetime*, by Select Age

(1997-2001 Social Security DI and SSI disability experience)

Select Age	Male		Female	
	Probability of death	Future lifetime	Probability of death	Future lifetime
18	0.048213	17.12	0.055448	19.37
19	0.053457	16.61	0.057076	19.00
20	0.056447	16.24	0.059288	18.66
21	0.060002	15.96	0.062546	18.25
22	0.062310	15.62	0.064290	18.03
23	0.066437	15.27	0.063651	17.86
24	0.068602	15.03	0.063608	17.74
25	0.068671	14.86	0.064028	17.56
26	0.068678	14.71	0.064905	17.43
27	0.069004	14.60	0.066358	17.31
28	0.069585	14.44	0.068699	17.18
29	0.068864	14.36	0.067714	17.09
30	0.068898	14.25	0.068263	16.86
31	0.069573	14.14	0.069162	16.56
32	0.070649	14.00	0.069513	16.27
33	0.071699	13.76	0.070385	15.99
34	0.073041	13.51	0.071809	15.72
35	0.074187	13.26	0.072620	15.44
36	0.074849	13.08	0.074137	15.18
37	0.075537	12.93	0.074859	15.11
38	0.077468	12.77	0.074888	15.15
39	0.079462	12.58	0.075147	15.20
40	0.081264	12.42	0.075497	15.18
41	0.081757	12.27	0.077117	14.96
42	0.082009	12.09	0.079028	14.72
43	0.084189	11.89	0.078911	14.56
44	0.085845	11.71	0.079275	14.33
45	0.086970	11.53	0.078163	14.09
46	0.088387	11.38	0.079196	13.86
47	0.088709	11.29	0.077546	13.78
48	0.088403	11.19	0.076457	13.71
49	0.087850	11.06	0.076051	13.52
50	0.089456	10.78	0.075020	13.34
51	0.093348	10.39	0.075239	12.93
52	0.094668	10.06	0.077450	12.54
53	0.096841	9.74	0.077892	12.10
54	0.096438	9.53	0.079865	11.77
55	0.095830	9.33	0.080235	11.46
56	0.095485	9.21	0.078557	11.08
57	0.097109	9.07	0.078631	10.91
58	0.096584	8.96	0.076039	10.57
59	0.098881	8.76	0.074986	10.71
60	0.103327	8.54	0.072366	10.55
61	0.110067	8.16	0.072077	10.27
62	0.120178	7.82	0.072019	10.08
63	0.131716	7.43	0.079247	9.51
64	0.136950	7.22	0.104357	9.01

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits.
2. *Probability of death* at select age [*x*] represents the average probability of dying within one year for those originally entitled to disability benefits at that particular age. Values are exposure-weighted averages of the graduated and blended probabilities of death across all durations from **tables 1A** and **1B**.
3. *Future lifetime* at select age [*x*] represents the aggregate life expectancy in years for those originally entitled to disability benefits at that particular age. Values are exposure-weighted averages of expected future lifetime across all durations from **tables 3A** and **3B**.

Table 5.—HIV Disabled Beneficiaries
Aggregate Probability of Death and *Expected Future Lifetime*, by Attained Age

(1997-2001 Social Security DI and SSI disability experience)

	Male		Female	
Attained Age	Probability of death	Future lifetime	Probability of death	Future lifetime
18	0.072424	18.20	0.064609	17.82
19	0.065225	17.84	0.073461	17.68
20	0.062027	17.29	0.083118	17.66
21	0.064024	16.75	0.084933	17.71
22	0.067217	16.33	0.082379	17.74
23	0.075035	15.86	0.081905	17.75
24	0.080115	15.46	0.079503	17.80
25	0.082972	15.28	0.076135	17.80
26	0.083132	15.13	0.073728	17.72
27	0.081708	15.02	0.073386	17.55
28	0.079202	14.92	0.073907	17.38
29	0.077348	14.81	0.074084	17.27
30	0.076674	14.69	0.074314	17.15
31	0.076677	14.57	0.074278	17.03
32	0.075851	14.47	0.072680	16.93
33	0.074393	14.37	0.070594	16.81
34	0.072669	14.23	0.070003	16.62
35	0.072307	14.07	0.068819	16.42
36	0.072383	13.89	0.068934	16.20
37	0.071316	13.71	0.069013	15.97
38	0.072337	13.50	0.068528	15.79
39	0.074946	13.29	0.069863	15.61
40	0.075837	13.10	0.071790	15.48
41	0.076130	12.94	0.073437	15.37
42	0.075154	12.79	0.074297	15.28
43	0.075049	12.61	0.074795	15.22
44	0.076570	12.42	0.074560	15.13
45	0.078055	12.24	0.072875	15.05
46	0.080618	12.06	0.072180	14.93
47	0.082665	11.92	0.073006	14.79
48	0.083607	11.79	0.074307	14.68
49	0.084261	11.67	0.074913	14.55
50	0.084513	11.54	0.074023	14.42
51	0.083733	11.37	0.073002	14.26
52	0.083281	11.18	0.071623	14.05
53	0.083813	10.93	0.069624	13.83
54	0.084122	10.66	0.070105	13.49
55	0.084070	10.40	0.069954	13.16
56	0.084093	10.15	0.069923	12.86
57	0.085751	9.90	0.070304	12.56
58	0.088392	9.66	0.070815	12.26
59	0.091486	9.45	0.071038	12.00
60	0.095506	9.23	0.069360	11.80
61	0.098184	9.03	0.069570	11.56
62	0.100652	8.82	0.069780	11.31
63	0.102997	8.60	0.070852	11.06
64	0.102286	8.44	0.069905	10.81
65	0.098855	8.31	0.065096	10.57
66	0.097156	8.15	0.061199	10.27
67	0.095087	7.97	0.059035	9.91
68	0.090852	7.75	0.060025	9.50
69	0.086811	7.48	0.062709	9.08
70	0.083694	7.14	0.066641	8.65
71	0.085045	6.75	0.071091	8.23
72	0.093143	6.32	0.077004	7.83
73	0.105225	5.92	0.080230	7.44
74	0.117143	5.56	0.085617	7.04

Notes:

1. *Attained age* calculated as sum of select age and duration.
2. *Probability of death* at attained age *x* represents the average probability of dying within one year for those originally entitled to disability benefits who have attained that particular age. Values are exposure-weighted averages of the graduated and blended probabilities of death across all durations from **tables 1A** and **1B**.
3. *Future lifetime* at attained age *x* represents the aggregate life expectancy in years for those originally entitled to disability benefits who have attained that particular age. Values are exposure-weighted averages of expected future lifetime across all durations from **tables 3A** and **3B**.

Table 6.—HIV Disabled Beneficiaries
Aggregate Probability of Death and *Expected Future Lifetime*, by Duration

(1997-2001 Social Security DI and SSI disability experience)

	Male		Female	
Duration	Probability of death	Future lifetime	Probability of death	Future lifetime
0	0.112445	12.04	0.094868	14.38
1	0.084512	12.60	0.085712	14.91
2	0.081327	12.81	0.078481	15.34
3	0.074517	13.00	0.072532	15.71
4	0.072186	13.11	0.067305	16.02
5	0.068041	13.19	0.063969	16.25
6	0.064653	13.21	0.057920	16.40
7	0.062874	13.18	0.057519	16.42
8	0.063826	13.10	0.058041	16.40
9	0.064739	13.02	0.057854	16.35
10	0.060845	12.97	0.049217	16.25
11	0.061610	12.84	0.049763	15.94
12	0.062328	12.72	0.050449	15.60
13	0.063071	12.58	0.051117	15.27
14	0.063998	12.43	0.051803	15.05
15	0.064381	12.39	0.052070	14.87
16	0.065032	12.29	0.052459	14.89
17	0.065496	12.24	0.053277	14.83
18	0.065447	12.28	0.053006	14.99
19	0.065376	12.32	0.052955	15.09
20	0.065435	12.30	0.052193	15.14
21	0.065964	12.20	0.051484	15.14
22	0.066981	12.14	0.052420	15.00
23	0.069219	11.97	0.053779	15.10
24	0.069744	11.83	0.054038	14.90
25	0.071001	11.63	0.054178	14.84
26	0.072043	11.43	0.054665	14.65
27	0.073566	11.21	0.055154	14.52
28	0.074011	10.80	0.049796	13.67
29	0.076903	10.63	0.047408	13.78
30	0.078583	10.76	0.048019	12.55
31	0.083898	10.42	0.052971	11.82
32	0.080229	9.89	0.057703	10.08
33	0.076840	9.38	0.055033	10.29
34	0.078741	9.11	0.058884	9.86
35	0.079633	8.89	0.062342	9.45
36	0.082223	8.71	0.065093	9.04

Notes:

1. *Duration* measured in years since selection.
2. *Probability of death* at duration *t* represents the average probability of dying during the (*t*+1) year of entitlement to disability benefits. Values are exposure-weighted averages of the graduated and blended probabilities of death across all ages from **tables 1A** and **1B**.
3. *Future lifetime* at duration *t* represents the aggregate life expectancy in years for those originally entitled to disability benefits who have not died after *t* years. Values are exposure-weighted averages of expected future lifetime across all ages from **tables 3A** and **3B**.

Table 7A.—Male HIV Disabled Beneficiaries (DI Program Only)

Probability of Death

(1997-2001 Social Security DI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.068271	0.071075	0.046439	0.029412	0.021024	0.029781	0.045714	0.028605	0.028486	0.019149	0.005990	28
19	0.072613	0.076703	0.054723	0.042308	0.034184	0.039730	0.049102	0.034919	0.034457	0.024881	0.015978	29
20	0.076358	0.081758	0.062735	0.054713	0.047208	0.049457	0.050678	0.041374	0.040497	0.030322	0.025934	30
21	0.080790	0.087020	0.071357	0.065016	0.059188	0.057638	0.050290	0.047546	0.048328	0.035729	0.035443	31
22	0.086500	0.092314	0.078834	0.071646	0.068716	0.062943	0.048187	0.051738	0.056902	0.041117	0.043747	32
23	0.091888	0.094522	0.085696	0.075760	0.074314	0.062271	0.045300	0.054890	0.064132	0.047813	0.050496	33
24	0.095336	0.091201	0.091606	0.076777	0.076608	0.059477	0.044074	0.056275	0.066809	0.054160	0.052817	34
25	0.099734	0.085267	0.094376	0.074363	0.074167	0.059381	0.045207	0.055863	0.065155	0.058851	0.051809	35
26	0.103845	0.082785	0.091703	0.072815	0.067820	0.061082	0.050772	0.056444	0.060343	0.059862	0.051919	36
27	0.105822	0.082750	0.087872	0.073719	0.065738	0.059783	0.056730	0.056968	0.055292	0.058890	0.050627	37
28	0.103697	0.081121	0.083602	0.074351	0.068152	0.060026	0.060117	0.056866	0.050930	0.058976	0.050368	38
29	0.101986	0.081013	0.079786	0.072729	0.067760	0.058740	0.061300	0.054836	0.047806	0.059390	0.051937	39
30	0.102714	0.082020	0.079011	0.069217	0.067656	0.058412	0.060068	0.052156	0.046410	0.059923	0.055621	40
31	0.107434	0.081299	0.077870	0.066696	0.066711	0.059669	0.056658	0.053413	0.048591	0.058965	0.060522	41
32	0.111109	0.080473	0.077164	0.069272	0.064168	0.058583	0.057472	0.053076	0.052962	0.056112	0.063219	42
33	0.111433	0.077329	0.076830	0.069016	0.062268	0.061113	0.061106	0.052541	0.061074	0.053178	0.062743	43
34	0.110225	0.076132	0.076952	0.067577	0.063516	0.065985	0.061291	0.053912	0.062405	0.052431	0.063519	44
35	0.107466	0.077638	0.074457	0.070840	0.069373	0.068671	0.059251	0.056333	0.060415	0.055772	0.063124	45
36	0.105250	0.078832	0.073683	0.071628	0.069991	0.068221	0.060908	0.059259	0.057525	0.061765	0.063685	46
37	0.107908	0.079135	0.073020	0.070080	0.072453	0.064897	0.061453	0.060769	0.059021	0.068391	0.066194	47
38	0.116426	0.082358	0.073913	0.071808	0.069669	0.061037	0.066221	0.061877	0.059989	0.070215	0.067565	48
39	0.120005	0.083720	0.077749	0.071820	0.068704	0.062718	0.069077	0.062188	0.062844	0.068176	0.067852	49
40	0.122672	0.083799	0.080498	0.072782	0.071178	0.064970	0.067165	0.060844	0.067199	0.066506	0.067549	50
41	0.118538	0.081781	0.077710	0.072892	0.070706	0.068931	0.065299	0.061667	0.072837	0.068632	0.064954	51
42	0.112346	0.079150	0.075264	0.071844	0.071470	0.070957	0.066148	0.061954	0.078047	0.071417	0.062696	52
43	0.114542	0.080987	0.075481	0.076007	0.072265	0.071115	0.070863	0.064901	0.079832	0.073563	0.061027	53
44	0.119511	0.083911	0.075815	0.078965	0.072659	0.071885	0.072610	0.068076	0.078755	0.076278	0.060028	54
45	0.128916	0.087518	0.077165	0.082293	0.074672	0.070915	0.070921	0.071338	0.076384	0.078061	0.057412	55
46	0.137705	0.092144	0.078727	0.081917	0.071291	0.069102	0.068912	0.075204	0.073441	0.077849	0.055952	56
47	0.144601	0.098745	0.077234	0.077542	0.068164	0.066059	0.066926	0.075633	0.072650	0.074871	0.056191	57
48	0.145673	0.098522	0.075689	0.072783	0.069805	0.065749	0.067089	0.075351	0.070579	0.071853	0.057672	58
49	0.145932	0.097284	0.074819	0.069509	0.072749	0.066217	0.068520	0.075341	0.067776	0.072004	0.059171	59
50	0.143177	0.093773	0.077319	0.072269	0.075188	0.068065	0.075386	0.077963	0.065532	0.074391	0.061165	60
51	0.142787	0.092109	0.079363	0.079858	0.077515	0.073270	0.083526	0.080815	0.065386	0.076604	0.062912	61
52	0.137683	0.090771	0.084425	0.083864	0.078278	0.080126	0.090433	0.083472	0.067406	0.077628	0.063657	62
53	0.134517	0.087967	0.090606	0.087073	0.081050	0.086846	0.095260	0.085530	0.072182	0.079629	0.065987	63
54	0.130404	0.087929	0.094037	0.086553	0.084496	0.091527	0.095260	0.086324	0.077373	0.082140	0.069607	64
55	0.127343	0.088175	0.094007	0.085587	0.087801	0.093550	0.095260	0.087634	0.080850	0.083294	0.073900	65
56	0.126627	0.090142	0.096386	0.081968	0.088668	0.094270	0.093634	0.087709	0.083861	0.083704	0.079536	66
57	0.129975	0.091870	0.098831	0.080933	0.091015	0.090825	0.090835	0.088015	0.086304	0.084658	0.084836	67
58	0.135055	0.092981	0.098627	0.079559	0.091449	0.086795	0.090031	0.087518	0.087786	0.085975	0.088400	68
59	0.140298	0.096991	0.097709	0.082699	0.090561	0.083310	0.091755	0.086217	0.087477	0.086790	0.090455	69
60	0.147956	0.104275	0.098053	0.090995	0.089676	0.083715	0.095311	0.085510	0.085321	0.086723	0.092485	70
61	0.160613	0.113792	0.101031	0.101483	0.090884	0.087959	0.096860	0.084778	0.082473	0.086381	0.096529	71
62	0.171302	0.124292	0.108780	0.109707	0.095864	0.093188	0.097541	0.083337	0.079066	0.085544	0.102877	72
63	0.182391	0.135917	0.119078	0.116821	0.101385	0.098016	0.097136	0.081609	0.075900	0.084410	0.110060	73
64	0.194901	0.149854	0.128624	0.124210	0.106701	0.102466	0.095654	0.079406	0.072407	0.083387	0.118244	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program. Probabilities reflect experience of the DI rolls only. Beneficiaries may be concurrently entitled to DI and SSI benefits, but those entitled to SSI only are not considered.

2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.

3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Table 7B.—Female HIV Disabled Beneficiaries (DI Program Only)

Probability of Death

(1997-2001 Social Security DI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.068820	0.107034	0.120594	0.115396	0.089705	0.051520	0.022305	0.016877	0.031300	0.042220	0.043192	28
19	0.073888	0.104300	0.117035	0.108615	0.087115	0.054024	0.025793	0.018461	0.033848	0.041903	0.040511	29
20	0.078742	0.100573	0.112637	0.101986	0.083942	0.056229	0.029305	0.020151	0.036042	0.041168	0.037764	30
21	0.084531	0.095467	0.106115	0.095089	0.081348	0.057313	0.032779	0.022269	0.037078	0.039267	0.034677	31
22	0.091998	0.090693	0.098794	0.087842	0.078998	0.057752	0.036366	0.025002	0.036882	0.037667	0.032520	32
23	0.098870	0.087715	0.090645	0.080512	0.074476	0.057140	0.039775	0.028184	0.036592	0.036794	0.031820	33
24	0.104976	0.087978	0.084087	0.072504	0.067922	0.056493	0.044245	0.031728	0.036392	0.037203	0.033247	34
25	0.110985	0.093041	0.083574	0.064928	0.061811	0.055906	0.049258	0.035902	0.036321	0.039011	0.035958	35
26	0.115924	0.100127	0.086403	0.060116	0.054887	0.055780	0.052532	0.039746	0.036992	0.041804	0.038044	36
27	0.118640	0.104697	0.088278	0.059270	0.049798	0.058205	0.054408	0.043864	0.039167	0.043900	0.038834	37
28	0.119398	0.106605	0.086497	0.061059	0.045978	0.061743	0.054221	0.047392	0.042623	0.045162	0.039722	38
29	0.118222	0.106528	0.084599	0.062889	0.043470	0.061329	0.051393	0.049915	0.045720	0.047713	0.040297	39
30	0.115270	0.102682	0.083558	0.062804	0.045631	0.058627	0.048103	0.050286	0.047950	0.051289	0.038780	40
31	0.112118	0.096646	0.082462	0.062010	0.050671	0.056054	0.045594	0.048890	0.049557	0.054043	0.034018	41
32	0.109548	0.089918	0.082355	0.061706	0.055282	0.053713	0.044472	0.046948	0.051812	0.053974	0.029865	42
33	0.109739	0.085884	0.081867	0.061484	0.057530	0.052125	0.045419	0.045824	0.055056	0.052689	0.028608	43
34	0.109139	0.084174	0.079815	0.061583	0.056684	0.052446	0.048558	0.045796	0.058341	0.049613	0.028188	44
35	0.103676	0.083553	0.077268	0.062778	0.056766	0.054775	0.053598	0.047681	0.059970	0.046825	0.029073	45
36	0.100576	0.080217	0.074543	0.064679	0.059507	0.057446	0.056165	0.050719	0.059897	0.046267	0.031635	46
37	0.100081	0.079529	0.073548	0.067941	0.064689	0.061317	0.057294	0.051583	0.059465	0.046146	0.033706	47
38	0.099652	0.082367	0.074461	0.071335	0.068971	0.065093	0.057004	0.051423	0.058710	0.043935	0.034667	48
39	0.099752	0.086759	0.074334	0.072375	0.070766	0.066561	0.055398	0.052212	0.057026	0.041873	0.034854	49
40	0.101624	0.090156	0.071364	0.070541	0.070287	0.063665	0.054408	0.052373	0.054547	0.041760	0.034849	50
41	0.104728	0.090821	0.067480	0.066843	0.068601	0.058683	0.054529	0.053568	0.052069	0.043611	0.034954	51
42	0.110179	0.088468	0.062845	0.062807	0.066061	0.056986	0.056070	0.055845	0.049689	0.047035	0.034329	52
43	0.112708	0.085576	0.061073	0.059285	0.066133	0.057391	0.057742	0.055737	0.048533	0.051350	0.032298	53
44	0.113599	0.085366	0.063020	0.058274	0.068668	0.060746	0.058591	0.055141	0.049776	0.054596	0.030624	54
45	0.112129	0.085671	0.066075	0.057618	0.070023	0.064318	0.059538	0.054918	0.052862	0.055876	0.029267	55
46	0.111026	0.087934	0.071538	0.055583	0.067114	0.064880	0.057119	0.054243	0.056498	0.056960	0.028804	56
47	0.112039	0.090448	0.075242	0.053438	0.063946	0.062627	0.052181	0.052575	0.060227	0.058317	0.028847	57
48	0.114402	0.092894	0.075840	0.053318	0.061549	0.058617	0.047743	0.051073	0.062989	0.059731	0.029021	58
49	0.118098	0.092780	0.075127	0.053709	0.060473	0.053755	0.044718	0.050875	0.065145	0.061859	0.029406	59
50	0.120558	0.091501	0.071205	0.053351	0.059577	0.048706	0.044192	0.051816	0.067498	0.064309	0.031117	60
51	0.120875	0.090637	0.066690	0.054131	0.058472	0.046285	0.046338	0.054124	0.069836	0.067047	0.033193	61
52	0.117804	0.089063	0.064464	0.056979	0.058938	0.048035	0.051100	0.057226	0.071931	0.068323	0.034366	62
53	0.111171	0.087590	0.066420	0.061575	0.061094	0.053330	0.058134	0.060902	0.072562	0.066129	0.037577	63
54	0.104896	0.084301	0.071634	0.066921	0.065085	0.061023	0.064687	0.064592	0.071788	0.062874	0.039083	64
55	0.097611	0.081516	0.076248	0.071502	0.070621	0.069484	0.068671	0.067693	0.070164	0.059619	0.041693	65
56	0.092511	0.079022	0.077399	0.074830	0.076374	0.077336	0.070835	0.069836	0.068012	0.057231	0.043240	66
57	0.091052	0.077729	0.075574	0.074700	0.082037	0.083444	0.071854	0.070447	0.065604	0.055796	0.046266	67
58	0.090294	0.074640	0.072105	0.072614	0.086047	0.086903	0.071769	0.068688	0.062979	0.054262	0.048983	68
59	0.094415	0.070566	0.068738	0.069138	0.086674	0.087161	0.070306	0.065281	0.060246	0.052761	0.051145	69
60	0.093709	0.065270	0.065319	0.065621	0.084543	0.083751	0.067049	0.060884	0.056921	0.051519	0.052765	70
61	0.109528	0.065238	0.061384	0.063262	0.079945	0.077560	0.062728	0.056209	0.054688	0.056909	0.056387	71
62	0.114977	0.070970	0.057983	0.062082	0.074284	0.070639	0.057504	0.055330	0.059044	0.062028	0.060999	72
63	0.137784	0.084119	0.065740	0.061945	0.067917	0.063862	0.061103	0.066324	0.063749	0.066573	0.062977	73
64	0.163086	0.092248	0.074113	0.061630	0.061527	0.065871	0.070327	0.069503	0.066788	0.077493	0.067271	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program. Probabilities reflect experience of the DI rolls only. Beneficiaries may be concurrently entitled to DI and SSI benefits, but those entitled to SSI only are not considered.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Appendix A

HIV Experience 1992-96

Mortality 1992-1996

This appendix presents HIV mortality experience for the DI and SSI rolls over the period 1992-96. CDC tracking shows that AIDS incidence in the general population peaked in 1993, due in part to the expansion of the AIDS surveillance case defintion.[12] The estimated number of deaths among persons with AIDS increased steadily through 1994, and then began to decline. Since the use of HAART became widespread during 1996, trends in AIDS incidence have become less reflective of underlying trends in HIV transmission. Beginning in 1996, a substantial increase in AIDS prevalence in the general population occured as a result of declines in AIDS deaths. AIDS incidence and deaths leveled off while AIDS prevalence continued to increase from 1998 through the period covered by the June 2001 CDC report.

The tables that follow are similar to those in the main section of this study, but show mortality experience for the preceding 5-year period. Mortality for DI and SSI beneficiaries with HIV was substantially higher during 1992-96 than during 1997-2001. As mentioned previously, much of the difference appears to coincide with the advent of HAART in 1996, as well as increased use of prophylactic drugs to prevent secondary AIDS-opportunistic illnesses. As discussed in the main section, differences in the composition of the rolls may also have played a part in the mortality improvements seen in the later period.

These factors had a significant impact on HIV disability with respect to new entitlements and deaths, which in turn had a significant impact on exposure of the DI and SSI rolls. Over the period 1992-96, there were roughly 143,000 new HIV beneficiaries, compared to 59,000 over the period 1997-2001.[13] In addition, during 1992-96, approximately 145,700 HIV beneficiaries were terminated from the DI and SSI rolls as a result of death, compared to 58,400 during 1997-2001. Although the rolls experienced a significant decline in entitlements, the number of life-years of exposure actually increased by 18 percent between the two 5-year periods. This is due to significant mortality improvements as beneficiaries remain on the rolls for a longer period of time.

The improvements in mortality between the two observation periods is substantial for both male and female beneficiaries. Male deaths decreased by 64 percent, while exposure increased by 12 percent. Female deaths decreased by 35 percent, while exposure increased by 38 percent. The sizable increase in exposure among females is reflective of patterns seen in the overall AIDS population monitored by CDC. According to CDC reports, women accounted for an increasing proportion of persons living with AIDS from 1992 through 1999[14]. In 1999, 25 percent of adults and adolescents reported as having AIDS were women. Furthermore, AIDS as a leading cause of death among women aged 25-44 had dropped from fourth in 1993 to fifth in 1999.[15] As discussed, mortality improvements increase the exposure of the disability rolls by lengthening the stay of beneficiaries.

Differences in AIDS incidence and death rates between males and females may be due in part to different methods of transmission, timeliness of diagnosis, and access to treatment. CDC reports indicate that about 25 percent of women with AIDS are infected through injection drug use while 75 percent are infected through heterosexual contact[16]. Drug use is also a factor in many of the cases attributed to heterosexual contact. Many women may have been unaware that they were at risk for HIV infection and may have remained undiagnosed until the onset of AIDS or until a perinatally infected child became ill.

Tables A.1A and **A.1B** show select-and-ultimate probabilities of death for male and female HIV disabled beneficiaries, by select age and duration since selection. Data reflect the combined actual experience of the DI and SSI rolls from January 1, 1992 through December 31, 1996. The methods used in table construction and graduation are the same as that used for 1997-2001. See appendix B for details.

For any given select age, the highest probability of death occurs within the first several durations. For males, at most select ages, mortality levels off around the third duration, then generally decreases thereafter; mortality may trend upward at the extreme older attained ages. For females, death probabilities may level off around the third duration and then continue to decrease gradually before slightly increasing when the beneficiaries reach their late fifties or early sixties. For those entering the rolls at higher ages, death probabilities do not show this slight increase until the later durations. As mentioned previously, trends in the data are not always predictable since it cannot be known with certainty how long individuals have been infected.

[12] *CDC Morbidity and Mortality Weekly Report* (June 2001/Vol.50/No.21).
[13] Totals include beneficiaries concurrently entitled to DI and SSI benefits, but do not include beneficiaries entitled to SSI only.
[14] CDC Factsheet: *HIV/AIDS Among US Women: Minority and Young Women at Continuing Risk* (May 2002).
[15] *CDC Morbidity and Mortality Weekly Report* (February 1995/Vol.44/No.5).
[16] CDC Factsheet: *HIV/AIDS Update* (contains data through 2000).

Tables A.2A and **A.2B** are survival tables showing the progression of a series of cohorts—each for a given select age—reflecting the probabilities of death shown in tables A.1A and A.1B.

Tables A.3A and **A.3B** show the expected future lifetime of male and female HIV disabled beneficiaries. Females display a higher future lifetime than males. Expected lifetimes for females may be nearly twice as long at early durations, diminishing to roughly 25-35 percent longer at later durations. As with general disability mortality, HIV beneficiaries often exhibit a shorter life expectancy in the first several years of entitlement than in later durations. This is due to higher mortality in those years.

Tables A.4 and **A.5** show the aggregate probability of death and expected future lifetime, by select and attained ages. **Table A.6** presents aggregated results based on duration.

Tables A.7A and **A.7B** show select-and-ultimate probabilities of death for HIV disabled workers by select age and duration. These tables are similar to tables A.1A and A.1B, with the exception that only the experience of the DI rolls is reflected.

Table A.1A.—Male HIV Disabled Beneficiaries

Probability of Death

(1992-96 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.076854	0.087708	0.089206	0.061027	0.055461	0.087573	0.070788	0.080378	0.065548	0.059547	0.026175	28
19	0.088874	0.111011	0.105061	0.079145	0.067732	0.090831	0.076339	0.079188	0.070155	0.058508	0.035386	29
20	0.104281	0.133725	0.120939	0.095781	0.077351	0.092170	0.079426	0.078617	0.073486	0.057869	0.044016	30
21	0.127002	0.156426	0.138630	0.112881	0.090422	0.089519	0.080527	0.078631	0.075761	0.060260	0.051570	31
22	0.149153	0.179238	0.164257	0.129726	0.101194	0.088661	0.078652	0.078970	0.079870	0.064220	0.056535	32
23	0.169807	0.203900	0.187145	0.146936	0.112418	0.095086	0.081696	0.091566	0.085960	0.061022	0.059417	33
24	0.191459	0.222371	0.208194	0.161924	0.124441	0.107506	0.088324	0.099555	0.088669	0.067597	0.062410	34
25	0.211794	0.237443	0.223288	0.174746	0.135778	0.116840	0.095417	0.102310	0.085295	0.073380	0.064590	35
26	0.223894	0.248470	0.231472	0.186327	0.141372	0.124218	0.105238	0.102703	0.084406	0.079017	0.066222	36
27	0.234227	0.253022	0.240856	0.192747	0.147224	0.129855	0.114649	0.102039	0.092021	0.082970	0.068403	37
28	0.247396	0.266549	0.241721	0.196555	0.153409	0.134009	0.118944	0.103979	0.096997	0.084305	0.070790	38
29	0.255681	0.272477	0.246727	0.199476	0.158608	0.140066	0.115353	0.107825	0.101039	0.084618	0.069896	39
30	0.262582	0.273916	0.245352	0.202317	0.162491	0.143509	0.112252	0.113671	0.102428	0.084143	0.071026	40
31	0.262492	0.273752	0.249462	0.203200	0.170781	0.144953	0.114585	0.117337	0.101961	0.085396	0.077454	41
32	0.272588	0.277835	0.252508	0.208816	0.174610	0.143782	0.121687	0.121073	0.099009	0.087663	0.079225	42
33	0.277280	0.277223	0.249079	0.209383	0.174784	0.145165	0.129459	0.123251	0.096419	0.089548	0.078623	43
34	0.278042	0.273672	0.250438	0.206304	0.179656	0.143489	0.132242	0.123669	0.095400	0.089701	0.080310	44
35	0.276746	0.270405	0.251872	0.204776	0.178754	0.143763	0.127044	0.123753	0.096958	0.091050	0.084384	45
36	0.279568	0.267104	0.245948	0.201826	0.176243	0.149285	0.125747	0.118037	0.097954	0.093478	0.087532	46
37	0.284982	0.272810	0.242287	0.204325	0.172484	0.156178	0.125975	0.110450	0.095949	0.095096	0.088550	47
38	0.290236	0.274323	0.242698	0.203122	0.166164	0.157617	0.127009	0.104626	0.094064	0.095632	0.089440	48
39	0.290438	0.276575	0.238931	0.203952	0.163713	0.151476	0.131751	0.104720	0.093154	0.094968	0.090336	49
40	0.298357	0.273055	0.240921	0.200075	0.164327	0.154070	0.139893	0.107317	0.093673	0.094886	0.089957	50
41	0.298605	0.275193	0.243805	0.195507	0.168595	0.157377	0.144743	0.112590	0.097034	0.096361	0.092158	51
42	0.299178	0.283952	0.244801	0.196684	0.165885	0.160740	0.145978	0.118866	0.101779	0.098606	0.096097	52
43	0.305512	0.285130	0.246607	0.201174	0.165428	0.160052	0.148671	0.123840	0.104544	0.103736	0.093240	53
44	0.310086	0.282741	0.251835	0.206170	0.170031	0.158247	0.150182	0.127483	0.105013	0.108852	0.097761	54
45	0.312000	0.285120	0.256819	0.205690	0.170441	0.157813	0.147055	0.128224	0.103943	0.112810	0.101354	55
46	0.319068	0.286988	0.263322	0.207687	0.169840	0.155792	0.142093	0.126635	0.103524	0.112463	0.103919	56
47	0.325155	0.289302	0.260181	0.214868	0.169018	0.156155	0.137459	0.122303	0.103385	0.107591	0.104140	57
48	0.326830	0.293370	0.261429	0.219118	0.166567	0.156682	0.131716	0.117504	0.101720	0.103935	0.102500	58
49	0.333441	0.297094	0.265384	0.221851	0.167153	0.155407	0.126173	0.113150	0.102387	0.105901	0.100921	59
50	0.329299	0.302086	0.270121	0.225542	0.170018	0.153895	0.122926	0.111385	0.103936	0.112406	0.097517	60
51	0.331425	0.306147	0.271023	0.228113	0.174460	0.153080	0.122289	0.112641	0.107836	0.119033	0.097252	61
52	0.344114	0.308002	0.267129	0.223546	0.176198	0.154484	0.131541	0.117515	0.110114	0.121675	0.098073	62
53	0.354920	0.308057	0.264875	0.216804	0.175384	0.155285	0.140352	0.122783	0.112347	0.123781	0.102190	63
54	0.362036	0.300859	0.260001	0.213344	0.175294	0.154543	0.143415	0.128310	0.113044	0.123906	0.106274	64
55	0.361238	0.291687	0.256044	0.213911	0.179922	0.154113	0.147705	0.132968	0.112206	0.121308	0.109171	65
56	0.360717	0.294804	0.256608	0.220779	0.188223	0.152456	0.149058	0.132703	0.113170	0.116670	0.111589	66
57	0.353863	0.307232	0.260317	0.226115	0.196934	0.152235	0.147468	0.131111	0.114915	0.113411	0.111121	67
58	0.353248	0.318283	0.262259	0.226929	0.202298	0.154343	0.147794	0.128216	0.115781	0.110728	0.109318	68
59	0.353820	0.323809	0.266328	0.228780	0.204966	0.157499	0.149973	0.124583	0.114660	0.108632	0.108615	69
60	0.349970	0.320039	0.269343	0.230568	0.201874	0.161626	0.154043	0.130011	0.128334	0.123218	0.110874	70
61	0.354594	0.316883	0.274645	0.227097	0.195777	0.165443	0.154521	0.127149	0.123095	0.121773	0.117155	71
62	0.368210	0.316184	0.276578	0.222405	0.189674	0.168565	0.152420	0.124224	0.115838	0.118986	0.127465	72
63	0.391356	0.313595	0.276680	0.220313	0.186713	0.170875	0.147479	0.121571	0.108120	0.115752	0.139658	73
64	0.419454	0.309333	0.277131	0.221166	0.186149	0.172704	0.141317	0.117650	0.099768	0.112677	0.152286	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Table A.1B.—Female HIV Disabled Beneficiaries

Probability of Death

(1992-96 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.082751	0.090393	0.117788	0.098218	0.065597	0.065452	0.045193	0.034998	0.018385	0.026223	0.046784	28
19	0.089243	0.105132	0.118067	0.092748	0.066672	0.066696	0.052358	0.036714	0.027481	0.035304	0.050400	29
20	0.098294	0.118578	0.118043	0.097977	0.074024	0.067802	0.058924	0.039017	0.035825	0.043411	0.055318	30
21	0.111335	0.131341	0.125088	0.103524	0.083800	0.074263	0.065104	0.042747	0.041727	0.048743	0.059317	31
22	0.123013	0.140365	0.132720	0.109097	0.093601	0.083003	0.070635	0.048154	0.047655	0.053114	0.060897	32
23	0.126575	0.148496	0.141063	0.115915	0.098078	0.088565	0.076078	0.054844	0.052638	0.055654	0.062307	33
24	0.128312	0.157740	0.149383	0.121854	0.100595	0.092605	0.081094	0.061663	0.055808	0.056273	0.065985	34
25	0.132162	0.162174	0.156305	0.126988	0.103041	0.096996	0.084308	0.067053	0.064554	0.057641	0.069859	35
26	0.137090	0.165702	0.160990	0.133272	0.107301	0.102375	0.085222	0.069111	0.065099	0.060624	0.070921	36
27	0.145245	0.170511	0.164451	0.136959	0.113191	0.108179	0.083463	0.069932	0.065549	0.060208	0.070564	37
28	0.151915	0.171312	0.162917	0.140622	0.119096	0.112411	0.084716	0.070034	0.065094	0.059163	0.066912	38
29	0.152792	0.175627	0.163873	0.140549	0.124344	0.114882	0.088502	0.071043	0.065400	0.063164	0.062867	39
30	0.154899	0.181945	0.164005	0.142868	0.129427	0.113452	0.092949	0.071484	0.065939	0.072689	0.060805	40
31	0.157998	0.184538	0.163815	0.140379	0.130037	0.110838	0.097701	0.071726	0.067243	0.080283	0.058985	41
32	0.164967	0.190119	0.164138	0.138620	0.127601	0.109060	0.099037	0.071392	0.070050	0.082036	0.059893	42
33	0.168997	0.191401	0.166015	0.138382	0.122873	0.108207	0.097777	0.069680	0.074464	0.083335	0.063225	43
34	0.168555	0.190670	0.171529	0.141274	0.119465	0.107679	0.095336	0.070019	0.078004	0.083155	0.065962	44
35	0.168210	0.189396	0.173929	0.146263	0.120162	0.108654	0.090670	0.072776	0.080881	0.080948	0.072005	45
36	0.173444	0.190212	0.171327	0.147692	0.127014	0.111075	0.088184	0.079991	0.079968	0.080033	0.079678	46
37	0.176340	0.191209	0.167844	0.151378	0.132665	0.112277	0.087326	0.081038	0.075373	0.079628	0.086972	47
38	0.175712	0.193409	0.166625	0.151050	0.132877	0.110974	0.088334	0.076441	0.074649	0.075244	0.090220	48
39	0.175740	0.193738	0.166777	0.150547	0.130857	0.105290	0.089679	0.074441	0.078786	0.071129	0.086236	49
40	0.176873	0.188901	0.168144	0.148431	0.125001	0.099432	0.089324	0.075778	0.082649	0.068878	0.077532	50
41	0.185870	0.187432	0.170996	0.147632	0.120090	0.097194	0.086040	0.081789	0.085024	0.070429	0.073062	51
42	0.192439	0.196984	0.175562	0.151154	0.116876	0.096593	0.088138	0.088114	0.083648	0.074776	0.068018	52
43	0.195503	0.204968	0.178768	0.153929	0.114936	0.093009	0.089280	0.090186	0.080473	0.079503	0.068522	53
44	0.204370	0.204143	0.179737	0.156918	0.113734	0.089748	0.090218	0.090629	0.080219	0.082158	0.068022	54
45	0.205202	0.198512	0.181910	0.159289	0.114914	0.087391	0.094454	0.089674	0.083071	0.083514	0.069530	55
46	0.205582	0.196627	0.182222	0.159655	0.116075	0.088879	0.094894	0.087614	0.087515	0.085248	0.071537	56
47	0.202576	0.193398	0.179979	0.156761	0.118945	0.092890	0.088118	0.083936	0.090681	0.085598	0.071753	57
48	0.198225	0.192478	0.174098	0.151553	0.122715	0.097134	0.083270	0.078883	0.092028	0.084504	0.068220	58
49	0.195191	0.192046	0.169453	0.144998	0.123607	0.099625	0.083251	0.075763	0.092708	0.084566	0.064416	59
50	0.197542	0.192152	0.165844	0.138417	0.123535	0.098844	0.081780	0.073229	0.093065	0.085928	0.059405	60
51	0.207099	0.193087	0.163666	0.133214	0.124143	0.096480	0.079281	0.073821	0.094253	0.088800	0.063368	61
52	0.222774	0.194415	0.162494	0.129738	0.123786	0.094349	0.084715	0.077260	0.095661	0.091889	0.065608	62
53	0.237979	0.195479	0.161793	0.128942	0.118795	0.090668	0.092171	0.081818	0.095410	0.091971	0.071738	63
54	0.250212	0.196691	0.162003	0.128235	0.110664	0.096921	0.097401	0.084806	0.093243	0.089819	0.074613	64
55	0.255247	0.197078	0.162178	0.126770	0.100734	0.101139	0.097856	0.086073	0.089900	0.086839	0.074290	65
56	0.250240	0.198349	0.161736	0.125276	0.092908	0.102283	0.094725	0.086271	0.085671	0.082684	0.077046	66
57	0.241707	0.201069	0.159419	0.123671	0.089008	0.102783	0.089910	0.085546	0.081999	0.078155	0.082438	67
58	0.232849	0.200560	0.157506	0.122520	0.088587	0.102585	0.084629	0.083476	0.078903	0.073373	0.087279	68
59	0.226566	0.198295	0.157165	0.122872	0.090956	0.099749	0.079169	0.080735	0.075924	0.068873	0.091130	69
60	0.224293	0.194705	0.157559	0.124162	0.094045	0.092171	0.073584	0.076556	0.072278	0.070407	0.094017	70
61	0.230104	0.192230	0.156676	0.125955	0.097062	0.081513	0.069730	0.070811	0.074574	0.077603	0.100472	71
62	0.241761	0.191976	0.155476	0.129517	0.099037	0.075218	0.075583	0.082784	0.081088	0.084584	0.108690	72
63	0.258972	0.195656	0.153301	0.134114	0.100313	0.079535	0.081329	0.094976	0.095894	0.090782	0.112214	73
64	0.278613	0.201569	0.152154	0.138303	0.101768	0.083767	0.087253	0.106816	0.110500	0.105672	0.119864	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Table A.2A.—Male HIV Disabled Beneficiaries

Survival Table

(1992-96 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	100,000	92,315	84,218	76,705	72,024	68,029	62,072	57,678	53,042	49,565	46,614	28
19	107,756	98,179	87,280	78,110	71,928	67,056	60,965	56,311	51,852	48,214	45,394	29
20	114,481	102,543	88,830	78,087	70,608	65,146	59,141	54,444	50,164	46,478	43,788	30
21	122,075	106,571	89,901	77,438	68,697	62,485	56,891	52,310	48,197	44,546	41,861	31
22	130,601	111,121	91,204	76,223	66,335	59,622	54,336	50,062	46,109	42,426	39,702	32
23	142,127	117,993	93,934	76,355	65,136	57,814	52,317	48,043	43,644	39,892	37,457	33
24	154,910	125,251	97,399	77,121	64,633	56,590	50,506	46,045	41,461	37,785	35,231	34
25	163,212	128,645	98,099	76,195	62,880	54,342	47,993	43,414	38,972	35,648	33,032	35
26	166,400	129,144	97,056	74,590	60,692	52,112	45,639	40,836	36,642	33,549	30,898	36
27	167,562	128,314	95,848	72,762	58,737	50,090	43,586	38,589	34,651	31,462	28,852	37
28	167,003	125,687	92,185	69,902	56,162	47,546	41,174	36,277	32,505	29,352	26,878	38
29	162,759	121,145	88,136	66,390	53,147	44,717	38,454	34,018	30,350	27,283	24,975	39
30	155,332	114,545	83,169	62,763	50,065	41,930	35,913	31,882	28,258	25,364	23,229	40
31	148,023	109,168	79,283	59,505	47,414	39,317	33,618	29,766	26,273	23,594	21,579	41
32	142,891	103,941	75,063	56,109	44,393	36,642	31,374	27,556	24,220	21,822	19,908	42
33	133,448	96,446	69,709	52,346	41,386	34,152	29,194	25,415	22,283	20,134	18,331	43
34	123,051	88,838	64,526	48,366	38,388	31,491	26,972	23,405	20,511	18,554	16,890	44
35	112,076	81,059	59,140	44,244	35,184	28,895	24,741	21,598	18,925	17,090	15,534	45
36	101,293	72,975	53,483	40,329	32,190	26,517	22,558	19,721	17,393	15,689	14,223	46
37	93,215	66,650	48,467	36,724	29,220	24,180	20,404	17,834	15,864	14,342	12,978	47
38	84,602	60,047	43,575	32,999	26,296	21,927	18,471	16,125	14,438	13,080	11,829	48
39	76,505	54,285	39,271	29,888	23,792	19,897	16,883	14,659	13,124	11,901	10,771	49
40	71,052	49,853	36,240	27,509	22,005	18,389	15,556	13,380	11,944	10,825	9,798	50
41	66,458	46,613	33,785	25,548	20,553	17,088	14,399	12,315	10,928	9,868	8,917	51
42	62,343	43,691	31,285	23,626	18,979	15,831	13,286	11,347	9,998	8,980	8,095	52
43	58,357	40,528	28,972	21,827	17,436	14,552	12,223	10,406	9,117	8,164	7,317	53
44	54,643	37,699	27,040	20,230	16,059	13,328	11,219	9,534	8,319	7,445	6,635	54
45	49,923	34,347	24,554	18,248	14,495	12,024	10,126	8,637	7,530	6,747	5,986	55
46	45,431	30,935	22,057	16,249	12,874	10,687	9,022	7,740	6,760	6,060	5,379	56
47	40,732	27,488	19,536	14,453	11,348	9,430	7,957	6,863	6,024	5,401	4,820	57
48	36,308	24,441	17,271	12,756	9,961	8,302	7,001	6,079	5,365	4,819	4,318	58
49	33,071	22,044	15,495	11,383	8,858	7,377	6,231	5,445	4,829	4,335	3,875	59
50	30,248	20,287	14,159	10,334	8,003	6,642	5,620	4,929	4,380	3,925	3,484	60
51	28,142	18,815	13,055	9,517	7,346	6,064	5,136	4,508	4,000	3,569	3,144	61
52	26,336	17,273	11,953	8,760	6,802	5,604	4,738	4,115	3,631	3,231	2,838	62
53	24,383	15,729	10,884	8,001	6,266	5,167	4,365	3,752	3,291	2,921	2,560	63
54	21,877	13,957	9,758	7,221	5,680	4,684	3,960	3,392	2,957	2,623	2,298	64
55	19,412	12,400	8,783	6,534	5,136	4,212	3,563	3,037	2,633	2,338	2,054	65
56	17,617	11,262	7,942	5,904	4,601	3,735	3,166	2,694	2,336	2,072	1,830	66
57	16,035	10,361	7,178	5,309	4,109	3,300	2,798	2,385	2,072	1,834	1,626	67
58	14,582	9,431	6,429	4,743	3,667	2,925	2,474	2,108	1,838	1,625	1,445	68
59	13,234	8,552	5,783	4,243	3,272	2,601	2,191	1,862	1,630	1,443	1,287	69
60	12,264	7,972	5,421	3,961	3,048	2,433	2,040	1,726	1,502	1,309	1,147	70
61	10,818	6,982	4,770	3,460	2,674	2,150	1,794	1,517	1,324	1,161	1,020	71
62	9,517	6,013	4,112	2,975	2,313	1,874	1,558	1,321	1,157	1,023	901	72
63	8,377	5,099	3,500	2,532	1,974	1,605	1,331	1,135	997	889	786	73
64	7,349	4,266	2,946	2,130	1,659	1,350	1,117	959	846	762	676	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $l_{[x]}$ at duration 0 represents the assumed number of lives originally entitled to disability benefits at select age [*x*]; the value $l_{[x]+t}$ at duration $t > 0$ represents the number of lives remaining from the original $l_{[x]}$ who have attained age [*x*]+*t*. Lives are decremented using probabilities from **table A.1A**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table A.2B.—Female HIV Disabled Beneficiaries
Survival Table
(1992-96 Social Security DI and SSI disability experience)

Select age	Duration of disability 0	1	2	3	4	5	6	7	8	9	10 or more	Attained age
18	100,000	91,725	83,434	73,606	66,377	62,023	57,963	55,343	53,406	52,424	51,049	28
19	100,026	91,099	81,522	71,897	65,229	60,880	56,820	53,845	51,868	50,443	48,661	29
20	101,502	91,525	80,672	71,149	64,178	59,427	55,398	52,134	50,100	48,305	46,208	30
21	104,198	92,597	80,435	70,374	63,089	57,802	53,509	50,025	47,887	45,889	43,652	31
22	106,322	93,243	80,155	69,517	61,933	56,136	51,477	47,841	45,537	43,367	41,063	32
23	106,319	92,862	79,072	67,918	60,045	54,156	49,360	45,605	43,104	40,835	38,562	33
24	105,153	91,661	77,202	65,669	57,667	51,866	47,063	43,246	40,579	38,314	36,159	34
25	103,387	89,723	75,172	63,422	55,368	49,663	44,846	41,065	38,311	35,838	33,773	35
26	100,131	86,404	72,087	60,482	52,421	46,796	42,005	38,425	35,769	33,440	31,414	36
27	96,418	82,414	68,362	57,120	49,297	43,717	38,988	35,734	33,235	31,056	29,186	37
28	91,658	77,734	64,417	53,922	46,339	40,820	36,231	33,162	30,840	28,833	27,127	38
29	87,770	74,359	61,300	51,255	44,051	38,574	34,143	31,121	28,910	27,019	25,312	39
30	85,047	71,873	58,796	49,153	42,131	36,678	32,517	29,495	27,387	25,581	23,721	40
31	81,215	68,383	55,764	46,629	40,083	34,871	31,006	27,977	25,970	24,224	22,279	41
32	77,563	64,768	52,454	43,844	37,766	32,947	29,354	26,447	24,559	22,839	20,965	42
33	73,279	60,895	49,240	41,065	35,382	31,035	27,677	24,971	23,231	21,501	19,709	43
34	69,017	57,384	46,443	38,477	33,041	29,094	25,961	23,486	21,842	20,138	18,463	44
35	64,928	54,006	43,777	36,163	30,874	27,164	24,213	22,018	20,416	18,765	17,245	45
36	61,437	50,781	41,122	34,077	29,044	25,355	22,539	20,551	18,907	17,395	16,003	46
37	56,968	46,922	37,950	31,580	26,799	23,244	20,634	18,832	17,306	16,002	14,728	47
38	51,468	42,424	34,219	28,517	24,210	20,993	18,663	17,014	15,713	14,540	13,447	48
39	46,392	38,239	30,831	25,689	21,822	18,966	16,969	15,447	14,297	13,171	12,234	49
40	41,724	34,344	27,856	23,172	19,733	17,266	15,549	14,160	13,087	12,005	11,179	50
41	38,905	31,674	25,737	21,336	18,186	16,002	14,447	13,204	12,124	11,093	10,312	51
42	37,449	30,242	24,285	20,021	16,995	15,009	13,559	12,364	11,275	10,332	9,559	52
43	35,608	28,647	22,775	18,704	15,825	14,006	12,703	11,569	10,526	9,679	8,909	53
44	33,636	26,762	21,299	17,471	14,729	13,054	11,882	10,810	9,830	9,041	8,299	54
45	31,547	25,073	20,096	16,440	13,821	12,233	11,164	10,110	9,203	8,438	7,734	55
46	29,555	23,479	18,862	15,425	12,962	11,457	10,439	9,448	8,620	7,866	7,196	56
47	27,061	21,579	17,406	14,273	12,036	10,604	9,619	8,771	8,035	7,306	6,681	57
48	24,588	19,714	15,919	13,148	11,155	9,786	8,835	8,099	7,460	6,773	6,202	58
49	22,538	18,139	14,655	12,172	10,407	9,121	8,212	7,528	6,958	6,313	5,779	59
50	20,828	16,714	13,502	11,263	9,704	8,505	7,664	7,037	6,522	5,915	5,407	60
51	19,689	15,611	12,597	10,535	9,132	7,998	7,226	6,653	6,162	5,581	5,086	61
52	18,967	14,742	11,876	9,946	8,656	7,585	6,869	6,287	5,801	5,246	4,764	62
53	18,125	13,812	11,112	9,314	8,113	7,149	6,501	5,902	5,419	4,902	4,451	63
54	17,151	12,860	10,331	8,657	7,547	6,712	6,061	5,471	5,007	4,540	4,132	64
55	15,781	11,753	9,437	7,907	6,905	6,209	5,581	5,035	4,602	4,188	3,824	65
56	14,218	10,660	8,546	7,164	6,267	5,685	5,104	4,621	4,222	3,860	3,540	66
57	12,717	9,643	7,704	6,476	5,675	5,170	4,639	4,222	3,861	3,544	3,267	67
58	11,290	8,661	6,924	5,833	5,118	4,665	4,186	3,832	3,512	3,235	2,998	68
59	10,014	7,745	6,209	5,233	4,590	4,173	3,757	3,460	3,181	2,939	2,736	69
60	8,892	6,898	5,555	4,680	4,099	3,714	3,372	3,124	2,885	2,676	2,487	70
61	8,032	6,184	4,995	4,212	3,681	3,324	3,053	2,840	2,639	2,442	2,253	71
62	7,573	5,742	4,640	3,919	3,411	3,073	2,842	2,627	2,410	2,215	2,027	72
63	7,306	5,414	4,355	3,687	3,193	2,873	2,644	2,429	2,198	1,987	1,807	73
64	7,142	5,152	4,114	3,488	3,006	2,700	2,474	2,258	2,017	1,794	1,604	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $l_{[x]}$ at duration 0 represents the assumed number of lives originally entitled to disability benefits at select age [*x*]; the value $l_{[x]+t}$ at duration $t > 0$ represents the number of lives remaining from the original $l_{[x]}$ who have attained age [*x*]+*t*. Lives are decremented using probabilities from **table A.1B**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table A.3A.—Male HIV Disabled Beneficiaries

Expected Future Lifetime

(1992-96 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	13.61	13.70	13.97	14.28	14.18	13.98	14.28	14.33	14.54	14.52	14.41	28
19	12.27	12.42	12.91	13.36	13.47	13.41	13.70	13.79	13.93	13.95	13.78	29
20	11.14	11.38	12.06	12.65	12.94	12.98	13.25	13.35	13.44	13.47	13.27	30
21	10.05	10.44	11.29	12.02	12.49	12.68	12.88	12.96	13.02	13.05	12.86	31
22	9.03	9.53	10.50	11.47	12.10	12.41	12.57	12.60	12.64	12.69	12.53	32
23	8.05	8.59	9.66	10.77	11.54	11.94	12.14	12.18	12.36	12.47	12.25	33
24	7.19	7.78	8.86	10.06	10.90	11.38	11.69	11.78	12.03	12.15	11.99	34
25	6.57	7.20	8.29	9.53	10.44	11.01	11.39	11.54	11.80	11.86	11.76	35
26	6.16	6.79	7.88	9.10	10.07	10.64	11.08	11.32	11.56	11.58	11.53	36
27	5.84	6.47	7.50	8.72	9.68	10.27	10.72	11.05	11.25	11.34	11.32	37
28	5.55	6.21	7.28	8.44	9.38	9.99	10.46	10.81	11.00	11.13	11.11	38
29	5.35	6.01	7.08	8.23	9.16	9.79	10.30	10.58	10.80	10.95	10.92	39
30	5.23	5.91	6.95	8.05	8.96	9.60	10.13	10.34	10.61	10.76	10.70	40
31	5.13	5.77	6.76	7.84	8.72	9.41	9.92	10.14	10.42	10.54	10.48	41
32	4.95	5.62	6.60	7.65	8.54	9.24	9.71	9.99	10.29	10.37	10.32	42
33	4.90	5.58	6.53	7.53	8.39	9.07	9.52	9.86	10.18	10.21	10.16	43
34	4.87	5.56	6.46	7.46	8.27	8.97	9.38	9.74	10.04	10.05	9.99	44
35	4.88	5.56	6.43	7.43	8.22	8.90	9.31	9.59	9.87	9.88	9.82	45
36	4.90	5.61	6.47	7.41	8.16	8.80	9.26	9.52	9.72	9.73	9.68	46
37	4.84	5.56	6.46	7.37	8.14	8.73	9.25	9.51	9.63	9.60	9.56	47
38	4.81	5.57	6.49	7.41	8.17	8.69	9.23	9.50	9.55	9.49	9.44	48
39	4.81	5.57	6.51	7.39	8.16	8.66	9.11	9.42	9.46	9.38	9.31	49
40	4.73	5.53	6.42	7.30	8.00	8.47	8.93	9.30	9.35	9.27	9.19	50
41	4.66	5.43	6.30	7.17	7.79	8.26	8.71	9.10	9.19	9.13	9.05	51
42	4.56	5.30	6.20	7.05	7.65	8.07	8.52	8.89	9.02	8.99	8.92	52
43	4.46	5.21	6.09	6.92	7.53	7.92	8.34	8.71	8.87	8.84	8.81	53
44	4.37	5.12	5.93	6.76	7.39	7.80	8.18	8.53	8.70	8.67	8.66	54
45	4.32	5.06	5.88	6.73	7.35	7.75	8.11	8.43	8.59	8.53	8.55	55
46	4.25	5.01	5.83	6.74	7.37	7.78	8.12	8.38	8.52	8.45	8.46	56
47	4.21	5.00	5.84	6.72	7.42	7.82	8.18	8.40	8.50	8.43	8.38	57
48	4.19	4.98	5.84	6.73	7.48	7.88	8.25	8.42	8.48	8.38	8.30	58
49	4.12	4.93	5.80	6.71	7.49	7.89	8.25	8.37	8.37	8.27	8.19	59
50	4.07	4.83	5.70	6.62	7.41	7.82	8.16	8.23	8.20	8.09	8.05	60
51	3.99	4.73	5.59	6.48	7.25	7.68	7.97	8.02	7.97	7.87	7.87	61
52	3.89	4.67	5.52	6.35	7.04	7.44	7.71	7.80	7.77	7.67	7.66	62
53	3.81	4.63	5.47	6.26	6.86	7.21	7.44	7.57	7.56	7.46	7.44	63
54	3.79	4.66	5.45	6.19	6.73	7.05	7.25	7.38	7.40	7.27	7.23	64
55	3.80	4.67	5.39	6.07	6.59	6.92	7.09	7.23	7.26	7.12	7.03	65
56	3.74	4.57	5.28	5.92	6.46	6.84	6.98	7.12	7.13	6.98	6.83	66
57	3.68	4.42	5.15	5.79	6.33	6.77	6.89	7.00	6.98	6.82	6.63	67
58	3.60	4.29	5.06	5.69	6.21	6.66	6.78	6.87	6.80	6.63	6.39	68
59	3.53	4.19	4.95	5.57	6.08	6.51	6.64	6.72	6.61	6.40	6.12	69
60	3.49	4.10	4.79	5.37	5.83	6.17	6.27	6.32	6.18	6.02	5.80	70
61	3.45	4.07	4.73	5.33	5.75	6.02	6.12	6.15	5.97	5.74	5.46	71
62	3.38	4.06	4.70	5.31	5.69	5.90	6.00	5.98	5.76	5.45	5.12	72
63	3.27	4.05	4.68	5.28	5.63	5.80	5.90	5.83	5.57	5.18	4.79	73
64	3.14	4.05	4.64	5.23	5.57	5.73	5.82	5.70	5.39	4.93	4.49	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $e_{[x]+t}$ at duration t represents the average number of years of life remaining for those originally entitled to disability benefits at select age [x] who have attained age [x]+t. Values are based on survivorship experience from **table A.2A**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table A.3B.—Female HIV Disabled Beneficiaries

Expected Future Lifetime

(1992-96 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	14.17	14.41	14.79	15.70	16.35	16.47	16.58	16.35	15.92	15.21	14.61	28
19	13.53	13.81	14.37	15.23	15.74	15.83	15.92	15.77	15.36	14.78	14.30	29
20	12.76	13.10	13.79	14.57	15.10	15.26	15.34	15.27	14.87	14.40	14.03	30
21	11.89	12.32	13.10	13.91	14.45	14.73	14.87	14.87	14.51	14.12	13.82	31
22	11.14	11.63	12.44	13.27	13.84	14.21	14.45	14.51	14.22	13.91	13.66	32
23	10.60	11.06	11.90	12.77	13.38	13.78	14.07	14.19	13.99	13.74	13.52	33
24	10.15	10.58	11.46	12.39	13.04	13.44	13.76	13.93	13.81	13.60	13.38	34
25	9.78	10.19	11.07	12.02	12.70	13.10	13.46	13.65	13.59	13.50	13.29	35
26	9.49	9.91	10.78	11.76	12.49	12.93	13.35	13.54	13.51	13.42	13.25	36
27	9.22	9.70	10.59	11.58	12.33	12.84	13.34	13.51	13.49	13.40	13.23	37
28	9.05	9.58	10.46	11.40	12.18	12.76	13.31	13.50	13.48	13.38	13.19	38
29	8.87	9.38	10.28	11.19	11.94	12.57	13.13	13.36	13.34	13.24	13.10	39
30	8.64	9.14	10.06	10.93	11.67	12.33	12.85	13.11	13.08	12.97	12.95	40
31	8.51	9.01	9.93	10.78	11.46	12.10	12.54	12.85	12.80	12.69	12.75	41
32	8.34	8.89	9.86	10.69	11.33	11.92	12.32	12.61	12.55	12.45	12.52	42
33	8.24	8.81	9.78	10.63	11.25	11.76	12.12	12.38	12.27	12.22	12.29	43
34	8.15	8.70	9.64	10.53	11.18	11.63	11.97	12.18	12.06	12.04	12.08	44
35	8.07	8.60	9.49	10.38	11.07	11.52	11.86	11.99	11.89	11.90	11.90	45
36	7.93	8.49	9.36	10.20	10.88	11.38	11.74	11.83	11.82	11.80	11.78	46
37	7.87	8.45	9.33	10.11	10.82	11.40	11.78	11.86	11.86	11.79	11.76	47
38	7.93	8.51	9.43	10.21	10.94	11.54	11.92	12.03	11.98	11.91	11.83	48
39	8.00	8.60	9.54	10.35	11.10	11.69	12.01	12.15	12.08	12.07	11.96	49
40	8.11	8.74	9.66	10.51	11.26	11.79	12.04	12.17	12.13	12.18	12.04	50
41	8.03	8.74	9.65	10.53	11.27	11.74	11.95	12.03	12.06	12.13	12.01	51
42	7.78	8.52	9.49	10.40	11.16	11.57	11.76	11.85	11.94	11.99	11.92	52
43	7.62	8.35	9.38	10.31	11.09	11.47	11.59	11.68	11.79	11.78	11.75	53
44	7.49	8.28	9.28	10.21	11.01	11.36	11.43	11.52	11.62	11.59	11.58	54
45	7.43	8.21	9.13	10.04	10.85	11.20	11.22	11.34	11.41	11.39	11.39	55
46	7.36	8.14	9.00	9.90	10.69	11.02	11.05	11.16	11.18	11.20	11.20	56
47	7.40	8.15	8.98	9.84	10.58	10.94	11.01	11.03	10.99	11.04	11.02	57
48	7.46	8.18	9.02	9.81	10.47	10.87	10.99	10.94	10.83	10.88	10.84	58
49	7.49	8.19	9.02	9.75	10.32	10.71	10.84	10.78	10.62	10.66	10.59	59
50	7.47	8.18	9.01	9.71	10.18	10.55	10.65	10.56	10.35	10.36	10.29	60
51	7.33	8.11	8.93	9.58	9.98	10.32	10.37	10.22	9.99	9.98	9.91	61
52	7.08	7.97	8.77	9.38	9.70	10.00	9.99	9.87	9.65	9.62	9.54	62
53	6.86	7.85	8.63	9.20	9.49	9.70	9.62	9.55	9.35	9.29	9.18	63
54	6.67	7.73	8.50	9.04	9.30	9.39	9.35	9.30	9.12	9.01	8.85	64
55	6.59	7.68	8.44	8.98	9.20	9.18	9.16	9.10	8.91	8.74	8.52	65
56	6.60	7.64	8.41	8.93	9.14	9.03	9.00	8.89	8.68	8.45	8.16	66
57	6.64	7.60	8.38	8.88	9.06	8.89	8.85	8.68	8.44	8.15	7.80	67
58	6.68	7.56	8.33	8.80	8.96	8.78	8.73	8.49	8.22	7.88	7.46	68
59	6.71	7.52	8.26	8.71	8.86	8.70	8.60	8.30	7.98	7.60	7.13	69
60	6.70	7.49	8.18	8.62	8.77	8.63	8.45	8.08	7.71	7.27	6.79	70
61	6.60	7.43	8.07	8.48	8.63	8.51	8.22	7.80	7.35	6.90	6.44	71
62	6.35	7.21	7.80	8.15	8.28	8.14	7.76	7.36	6.97	6.54	6.10	72
63	5.99	6.91	7.47	7.74	7.86	7.68	7.30	6.90	6.57	6.22	5.79	73
64	5.62	6.60	7.13	7.32	7.42	7.20	6.81	6.42	6.13	5.82	5.46	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value $e_{[x]+t}$ at duration t represents the average number of years of life remaining for those originally entitled to disability benefits at select age [x] who have attained age [x]+t. Values are based on survivorship experience from **table A.2B**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

Table A.4.—HIV Disabled Beneficiaries
Aggregate Probability of Death and *Expected Future Lifetime*, by Select Age

(1992-96 Social Security DI and SSI disability experience)

	Male		Female	
Select Age	Probability of death	Future lifetime	Probability of death	Future lifetime
18	0.068322	13.51	0.075990	14.82
19	0.083109	12.63	0.086397	14.34
20	0.094482	12.03	0.093430	13.69
21	0.111779	11.31	0.102772	12.99
22	0.130359	10.64	0.113820	12.33
23	0.150559	9.82	0.119461	11.88
24	0.170776	9.02	0.127058	11.41
25	0.188361	8.42	0.131007	11.11
26	0.200537	7.95	0.136783	10.81
27	0.212855	7.47	0.142660	10.59
28	0.223527	7.13	0.146474	10.40
29	0.232689	6.82	0.148653	10.22
30	0.235709	6.68	0.151829	9.96
31	0.238340	6.49	0.154599	9.74
32	0.245431	6.28	0.157002	9.64
33	0.246176	6.21	0.157643	9.58
34	0.246689	6.14	0.159302	9.43
35	0.245571	6.12	0.160455	9.29
36	0.244566	6.13	0.163871	9.10
37	0.248019	6.08	0.164185	9.11
38	0.250742	6.04	0.165421	9.13
39	0.251339	6.02	0.166034	9.18
40	0.253506	5.94	0.163809	9.34
41	0.255266	5.81	0.167282	9.26
42	0.258822	5.68	0.172959	9.05
43	0.263482	5.54	0.175812	8.93
44	0.267847	5.39	0.178870	8.80
45	0.270347	5.33	0.176855	8.76
46	0.273812	5.30	0.179132	8.55
47	0.277050	5.28	0.175619	8.62
48	0.279562	5.27	0.170919	8.67
49	0.280948	5.27	0.166517	8.69
50	0.284454	5.14	0.167123	8.64
51	0.286239	5.05	0.163866	8.59
52	0.291586	4.93	0.170502	8.31
53	0.294976	4.83	0.176643	8.09
54	0.294866	4.83	0.181420	7.93
55	0.287317	4.86	0.183020	7.81
56	0.289290	4.76	0.168520	7.90
57	0.296924	4.55	0.170139	7.79
58	0.294435	4.54	0.151816	7.86
59	0.297433	4.42	0.167058	7.61
60	0.295327	4.33	0.161554	7.62
61	0.294897	4.28	0.160182	7.54
62	0.299634	4.24	0.162550	7.19
63	0.310498	4.09	0.170110	6.85
64	0.327786	4.02	0.198767	5.97

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits.
2. *Probability of death* at select age [*x*] represents the average probability of dying within one year for those originally entitled to disability benefits at that particular age. Values are exposure-weighted averages of the graduated and blended probabilities of death across all durations from **tables A.1A** and **A.1B**.
3. *Future lifetime* at select age [*x*] represents the aggregate life expectancy in years for those originally entitled to disability benefits at that particular age. Values are exposure-weighted averages of expected future lifetime across all durations from **tables A.3A** and **A.3B**.

Table A.5.—HIV Disabled Beneficiaries
Aggregate Probability of Death and *Expected Future Lifetime,* by Attained Age

(1992-96 Social Security DI and SSI disability experience)

	Male		Female	
Attained Age	Probability of death	Future lifetime	Probability of death	Future lifetime
18	0.076854	13.61	0.082751	14.17
19	0.088342	12.92	0.089688	13.87
20	0.102948	12.17	0.103995	13.47
21	0.118910	11.28	0.113442	13.03
22	0.137140	10.44	0.118955	12.55
23	0.156280	9.66	0.122574	11.98
24	0.175531	8.96	0.127347	11.52
25	0.193759	8.30	0.133362	11.14
26	0.207338	7.79	0.137908	10.78
27	0.218384	7.38	0.143873	10.50
28	0.227265	7.06	0.148936	10.31
29	0.235964	6.83	0.150009	10.15
30	0.240200	6.68	0.152275	10.00
31	0.241238	6.58	0.155346	9.87
32	0.244288	6.44	0.158269	9.74
33	0.247465	6.34	0.160528	9.68
34	0.247380	6.29	0.159761	9.64
35	0.246007	6.25	0.158937	9.57
36	0.245855	6.24	0.160248	9.47
37	0.245601	6.23	0.160870	9.41
38	0.246579	6.24	0.159851	9.40
39	0.245030	6.25	0.159023	9.41
40	0.246812	6.25	0.158704	9.50
41	0.243427	6.26	0.159199	9.55
42	0.243340	6.21	0.160162	9.54
43	0.245951	6.14	0.161783	9.52
44	0.245994	6.06	0.165303	9.45
45	0.246503	5.98	0.164593	9.42
46	0.249341	5.91	0.163771	9.35
47	0.253125	5.83	0.162498	9.34
48	0.256148	5.77	0.160126	9.35
49	0.259396	5.71	0.156998	9.39
50	0.260509	5.66	0.156314	9.31
51	0.263741	5.59	0.156891	9.26
52	0.270345	5.50	0.159361	9.15
53	0.271467	5.49	0.161894	9.02
54	0.272839	5.45	0.164594	8.86
55	0.271983	5.39	0.163274	8.79
56	0.267767	5.34	0.159890	8.72
57	0.266655	5.22	0.155705	8.66
58	0.269889	5.09	0.152092	8.60
59	0.271629	5.03	0.148951	8.52
60	0.273924	4.92	0.146464	8.41
61	0.275834	4.83	0.147308	8.28
62	0.268898	4.92	0.138408	8.30
63	0.265248	4.97	0.138136	8.16
64	0.254916	5.10	0.126904	8.15
65	0.205220	5.64	0.104734	8.25
66	0.176337	5.93	0.089999	8.17
67	0.151157	6.11	0.081504	7.93
68	0.134328	6.13	0.080340	7.59
69	0.121855	6.02	0.084100	7.23
70	0.115662	5.79	0.090176	6.85
71	0.116126	5.49	0.097299	6.48
72	0.122963	5.15	0.107303	6.11
73	0.137954	4.80	0.111507	5.79
74	0.152286	4.49	0.119864	5.46

Notes:

1. *Attained age* calculated as sum of select age and duration.
2. *Probability of death* at attained age *x* represents the average probability of dying within one year for those originally entitled to disability benefits who have attained that particular age. Values are exposure-weighted averages of the graduated and blended probabilities of death across all durations from **tables A.1A** and **A.1B**.
3. *Future lifetime* at attained age *x* represents the aggregate life expectancy in years for those originally entitled to disability benefits who have attained that particular age. Values are exposure-weighted averages of expected future lifetime across all durations from **tables A.3A** and **A.3B**.

Table A.6.—HIV Disabled Beneficiaries
Aggregate Probability of Death and *Expected Future Lifetime*, by Duration

(1992-96 Social Security DI and SSI disability experience)

	Male		Female	
Duration	Probability of death	Future lifetime	Probability of death	Future lifetime
0	0.283541	4.92	0.169336	8.42
1	0.273071	5.70	0.183222	9.05
2	0.244393	6.68	0.164897	9.97
3	0.199685	7.72	0.140544	10.85
4	0.163293	8.56	0.118649	11.55
5	0.142987	9.19	0.103270	12.02
6	0.122155	9.71	0.087680	12.32
7	0.111233	10.06	0.072185	12.42
8	0.095347	10.35	0.071452	12.29
9	0.086784	10.50	0.071003	12.15
10	0.074625	10.60	0.068964	12.03
11	0.075340	10.55	0.069579	12.02
12	0.076890	10.43	0.069796	11.98
13	0.077042	10.45	0.069784	12.01
14	0.077695	10.42	0.070278	12.08
15	0.077865	10.39	0.070932	12.15
16	0.079182	10.27	0.071142	12.14
17	0.080104	10.16	0.071624	12.05
18	0.082945	9.94	0.070367	12.09
19	0.084987	9.79	0.070967	11.93
20	0.087629	9.60	0.071820	11.81
21	0.089931	9.43	0.073790	11.63
22	0.091907	9.28	0.075381	11.54
23	0.092693	8.99	0.079757	10.63
24	0.094067	8.86	0.074262	11.57
25	0.096564	8.74	0.070594	11.08
26	0.100894	8.29	0.068309	10.66
27	0.101452	7.92	0.065571	9.73
28	0.104630	7.60	0.068990	9.38
29	0.106346	7.60	0.068502	9.20
30	0.102299	7.98	0.071738	9.18

Notes:

1. *Duration* measured in years since selection.
2. *Probability of death* at duration *t* represents the average probability of dying during the (*t*+1) year of entitlement to disability benefits. Values are exposure-weighted averages of the graduated and blended probabilities of death across all ages from **tables A.1A** and **A.1B**.
3. *Future lifetime* at duration *t* represents the aggregate life expectancy in years for those originally entitled to disability benefits who have not died after *t* years. Values are exposure-weighted averages of expected future lifetime across all ages from **tables A.3A** and **A.3B**.

Table A.7A.—Male HIV Disabled Beneficiaries (DI Program Only)

Probability of Death

(1992-96 Social Security DI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.083143	0.125620	0.095404	0.063989	0.036931	0.026101	0.041330	0.032434	0.039610	0.048491	0.051228	28
19	0.102308	0.147033	0.116319	0.082042	0.055439	0.042194	0.052732	0.047554	0.051541	0.055394	0.054988	29
20	0.121279	0.167906	0.136524	0.100459	0.073264	0.058507	0.063783	0.063061	0.063324	0.062028	0.058626	30
21	0.143307	0.187474	0.156936	0.121048	0.089899	0.074795	0.074592	0.079262	0.074481	0.068734	0.061690	31
22	0.166415	0.208700	0.184031	0.141772	0.105169	0.090007	0.084637	0.095696	0.084917	0.075574	0.062392	32
23	0.192268	0.231526	0.209878	0.163155	0.119266	0.104507	0.094230	0.109974	0.092658	0.081477	0.061113	33
24	0.220468	0.249497	0.230135	0.181175	0.135239	0.118904	0.102043	0.120119	0.098760	0.086444	0.060112	34
25	0.243398	0.265313	0.241581	0.197286	0.148290	0.128593	0.106302	0.124261	0.104328	0.091039	0.059373	35
26	0.257986	0.277530	0.251817	0.209626	0.153321	0.135548	0.110752	0.123111	0.110864	0.094830	0.057839	36
27	0.267891	0.281427	0.263756	0.214390	0.157586	0.140991	0.115562	0.119765	0.115986	0.096803	0.056643	37
28	0.279386	0.293601	0.265723	0.216678	0.162446	0.143736	0.118080	0.118455	0.118240	0.096533	0.057285	38
29	0.286262	0.298196	0.270046	0.219755	0.167638	0.146235	0.115376	0.117498	0.118548	0.094704	0.058874	39
30	0.290573	0.298485	0.269322	0.223541	0.172433	0.145423	0.113473	0.118790	0.116069	0.091943	0.061342	40
31	0.291422	0.295149	0.272669	0.225404	0.182163	0.144905	0.118118	0.120372	0.112254	0.089473	0.066574	41
32	0.304515	0.299171	0.273831	0.230754	0.189278	0.146697	0.129526	0.124019	0.107691	0.087428	0.069541	42
33	0.311974	0.304021	0.273399	0.235216	0.191748	0.153613	0.138939	0.128523	0.104216	0.086764	0.069017	43
34	0.313162	0.307336	0.278897	0.235968	0.197802	0.157691	0.143022	0.131136	0.100818	0.085803	0.069871	44
35	0.311234	0.302524	0.282073	0.237112	0.197698	0.160068	0.140263	0.131488	0.099249	0.086118	0.069436	45
36	0.319427	0.300062	0.277002	0.229221	0.197976	0.164846	0.139447	0.125740	0.097445	0.087053	0.070054	46
37	0.324502	0.305336	0.273967	0.224141	0.195877	0.169430	0.139806	0.118811	0.094425	0.086384	0.072813	47
38	0.327859	0.302321	0.272789	0.224922	0.187842	0.172672	0.143942	0.114409	0.092590	0.084747	0.074322	48
39	0.332243	0.308669	0.268731	0.229090	0.185823	0.171038	0.151053	0.113683	0.091057	0.083739	0.074637	49
40	0.342377	0.308808	0.266703	0.224788	0.185374	0.176786	0.157626	0.115127	0.091205	0.084630	0.074304	50
41	0.342711	0.309816	0.270118	0.219064	0.188417	0.181266	0.160620	0.117801	0.094598	0.088422	0.071449	51
42	0.345098	0.319857	0.274175	0.216866	0.188495	0.182870	0.161822	0.120870	0.100255	0.092677	0.068966	52
43	0.357941	0.325065	0.276557	0.219384	0.191161	0.178990	0.164103	0.124439	0.104993	0.094346	0.068933	53
44	0.363801	0.326360	0.283660	0.226461	0.194039	0.172745	0.164374	0.129097	0.107733	0.095771	0.069770	54
45	0.361212	0.328289	0.291326	0.229112	0.191338	0.169358	0.159564	0.132736	0.109343	0.097136	0.070347	55
46	0.363893	0.323286	0.296778	0.230814	0.187432	0.166539	0.152207	0.133760	0.109300	0.098157	0.071818	56
47	0.370453	0.325388	0.291028	0.238202	0.183880	0.165907	0.145619	0.131028	0.108884	0.097884	0.073809	57
48	0.372783	0.330432	0.292664	0.244630	0.180272	0.164358	0.139879	0.127227	0.108379	0.095606	0.075640	58
49	0.377197	0.333112	0.297996	0.249370	0.179429	0.163007	0.136074	0.123761	0.106439	0.092109	0.077310	59
50	0.372227	0.336803	0.300676	0.252298	0.181077	0.162037	0.135594	0.121589	0.102920	0.089269	0.077097	60
51	0.375351	0.339788	0.294778	0.249587	0.184790	0.163793	0.136590	0.119505	0.098051	0.091925	0.078640	61
52	0.385854	0.340113	0.287026	0.240343	0.185568	0.167975	0.137500	0.115341	0.091975	0.093154	0.079571	62
53	0.394292	0.336287	0.284313	0.233346	0.183847	0.170443	0.136854	0.111308	0.085554	0.095555	0.082484	63
54	0.398652	0.327947	0.282079	0.229849	0.183350	0.168665	0.134909	0.107778	0.085110	0.098568	0.087009	64
55	0.397489	0.323837	0.279588	0.230476	0.186666	0.165346	0.131580	0.104878	0.088935	0.099953	0.092375	65
56	0.396620	0.331189	0.278582	0.236055	0.193082	0.159877	0.127277	0.101099	0.092247	0.100445	0.099420	66
57	0.389835	0.344241	0.280736	0.241521	0.200702	0.155359	0.121922	0.097333	0.094934	0.101590	0.106045	67
58	0.389248	0.353183	0.282947	0.246610	0.206813	0.153444	0.117528	0.094391	0.096565	0.103170	0.110500	68
59	0.388658	0.355485	0.289409	0.253811	0.212358	0.154018	0.115638	0.092933	0.096225	0.104148	0.113069	69
60	0.383698	0.352369	0.296965	0.259487	0.214274	0.157725	0.116372	0.093218	0.093853	0.104068	0.115606	70
61	0.386548	0.350832	0.306547	0.258640	0.214355	0.163898	0.119325	0.095180	0.090720	0.103657	0.120661	71
62	0.400798	0.350283	0.311878	0.255217	0.214507	0.171032	0.123964	0.098535	0.093963	0.102653	0.128596	72
63	0.429150	0.346451	0.314128	0.253693	0.217197	0.178922	0.129085	0.101881	0.097725	0.099889	0.137575	73
64	0.465179	0.341202	0.315227	0.254505	0.222109	0.186908	0.134584	0.105383	0.101771	0.110605	0.147805	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program. Probabilities reflect experience of the DI rolls only. Beneficiaries may be concurrently entitled to DI and SSI benefits, but those entitled to SSI only are not considered.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Table A.7B.—Female HIV Disabled Beneficiaries (DI Program Only)

Probability of Death

(1992-96 Social Security DI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.079026	0.114213	0.138578	0.123934	0.091646	0.072268	0.052822	0.038317	0.035101	0.039890	0.047312	28
19	0.097538	0.135342	0.145327	0.125573	0.092228	0.076082	0.058458	0.043874	0.041652	0.043447	0.046805	29
20	0.116184	0.156284	0.152323	0.127900	0.093513	0.080368	0.063940	0.049413	0.048174	0.046938	0.046180	30
21	0.135438	0.176292	0.160768	0.132327	0.096113	0.084998	0.068925	0.055025	0.054499	0.050205	0.045181	31
22	0.154913	0.191922	0.169393	0.139520	0.100614	0.089130	0.073272	0.060662	0.060063	0.052938	0.043320	32
23	0.169330	0.201566	0.180081	0.147580	0.105926	0.091704	0.076825	0.065972	0.064765	0.054720	0.050912	33
24	0.178069	0.207922	0.192609	0.154425	0.112470	0.094513	0.079749	0.070487	0.067896	0.054872	0.053195	34
25	0.183582	0.210439	0.202868	0.159948	0.119576	0.098598	0.081119	0.073378	0.069391	0.053143	0.057533	35
26	0.185818	0.210603	0.207652	0.164713	0.127558	0.103194	0.082253	0.073179	0.068364	0.060616	0.060870	36
27	0.186906	0.209077	0.205132	0.168508	0.134411	0.106905	0.083430	0.071718	0.065579	0.063655	0.062134	37
28	0.190539	0.210526	0.198987	0.171664	0.140192	0.107861	0.086407	0.070346	0.061443	0.065485	0.063555	38
29	0.196869	0.219549	0.197110	0.172484	0.143504	0.106551	0.089859	0.069628	0.064008	0.069184	0.064475	39
30	0.207891	0.230446	0.199513	0.173059	0.143768	0.103922	0.092597	0.068784	0.067130	0.074369	0.062048	40
31	0.225123	0.236764	0.205855	0.169213	0.142432	0.103383	0.095343	0.067818	0.069380	0.078362	0.054429	41
32	0.243163	0.238084	0.209423	0.163308	0.141715	0.105583	0.096095	0.067157	0.072537	0.078262	0.047784	42
33	0.253629	0.237106	0.208117	0.159128	0.139577	0.107540	0.094466	0.065585	0.077078	0.076399	0.045773	43
34	0.258253	0.237884	0.205982	0.158736	0.135544	0.107134	0.091559	0.062701	0.081677	0.071939	0.045101	44
35	0.252717	0.238934	0.203287	0.159897	0.129743	0.103242	0.087786	0.064369	0.083958	0.067896	0.046517	45
36	0.247372	0.241603	0.199467	0.157574	0.126425	0.098399	0.083574	0.068471	0.083856	0.067087	0.050616	46
37	0.244826	0.242575	0.195985	0.154614	0.124098	0.094370	0.079644	0.069637	0.083251	0.066912	0.053930	47
38	0.243154	0.240779	0.193150	0.152812	0.119172	0.091325	0.076862	0.069421	0.082194	0.063706	0.055467	48
39	0.244224	0.236722	0.193704	0.152439	0.113498	0.086491	0.072196	0.070486	0.079836	0.060716	0.055766	49
40	0.245567	0.229702	0.197210	0.151862	0.108376	0.080183	0.070730	0.070704	0.076366	0.060552	0.055758	50
41	0.249439	0.227962	0.201205	0.150573	0.104525	0.074667	0.070888	0.072317	0.072897	0.063236	0.055926	51
42	0.252011	0.234987	0.206778	0.150880	0.102631	0.069499	0.072891	0.075391	0.069565	0.068201	0.054926	52
43	0.257186	0.239285	0.207500	0.149957	0.101901	0.071739	0.075065	0.075245	0.067946	0.074458	0.051677	53
44	0.268059	0.235922	0.202809	0.149774	0.101875	0.075933	0.076168	0.074440	0.069686	0.079164	0.048998	54
45	0.275026	0.230493	0.196181	0.151860	0.101210	0.080398	0.077399	0.074139	0.074007	0.081020	0.046827	55
46	0.280487	0.230282	0.189600	0.153471	0.099110	0.081100	0.074255	0.073228	0.079097	0.082592	0.046086	56
47	0.283300	0.229393	0.184919	0.151989	0.098986	0.078284	0.067835	0.070976	0.084318	0.084560	0.046155	57
48	0.280516	0.230267	0.181096	0.148422	0.100710	0.073271	0.062066	0.068949	0.088185	0.086610	0.047682	58
49	0.277422	0.229939	0.179738	0.143144	0.102695	0.067194	0.058133	0.068681	0.091203	0.089696	0.052834	59
50	0.279904	0.227908	0.180224	0.138041	0.104230	0.060883	0.057450	0.069952	0.094497	0.093248	0.055628	60
51	0.287003	0.227813	0.181145	0.134154	0.104819	0.057856	0.060239	0.073067	0.097770	0.097218	0.056873	61
52	0.296224	0.228173	0.182075	0.131358	0.105012	0.060044	0.066430	0.077255	0.100703	0.099068	0.057057	62
53	0.305687	0.229954	0.183024	0.130205	0.103133	0.066663	0.075574	0.082218	0.101587	0.095887	0.056236	63
54	0.313424	0.232727	0.183418	0.128766	0.099692	0.076279	0.084093	0.087199	0.100503	0.091167	0.055919	64
55	0.314705	0.235461	0.182556	0.127397	0.095179	0.086855	0.089272	0.091386	0.098230	0.086448	0.056311	65
56	0.307646	0.238446	0.180756	0.126512	0.090974	0.096670	0.092086	0.094279	0.095217	0.082985	0.057718	66
57	0.295924	0.241963	0.178151	0.126292	0.088220	0.104305	0.093410	0.095103	0.091846	0.080904	0.060442	67
58	0.284262	0.241986	0.176371	0.127102	0.087459	0.108629	0.093300	0.092729	0.088171	0.078680	0.064619	68
59	0.276877	0.240431	0.176336	0.128641	0.088944	0.108951	0.091398	0.088129	0.084344	0.076503	0.069879	69
60	0.274923	0.238823	0.178520	0.130850	0.091297	0.104689	0.087164	0.082193	0.079689	0.073062	0.075151	70
61	0.280447	0.237663	0.180692	0.132958	0.094039	0.096950	0.081546	0.083692	0.083678	0.082768	0.081228	71
62	0.289534	0.236894	0.182276	0.135860	0.096426	0.088299	0.079752	0.095372	0.097375	0.092966	0.088267	72
63	0.302195	0.237619	0.183492	0.139993	0.098635	0.078422	0.085829	0.107164	0.112011	0.103652	0.095885	73
64	0.316224	0.238856	0.185197	0.144398	0.101031	0.083658	0.092126	0.118599	0.126426	0.114562	0.104047	74

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program. Probabilities reflect experience of the DI rolls only. Beneficiaries may be concurrently entitled to DI and SSI benefits, but those entitled to SSI only are not considered.
2. The value $q_{[x]+t}$ at duration t represents the probability of death—in a multiple-decrement environment—during the (t+1) year of entitlement for those originally entitled to disability benefits at select age [x] who have attained age [x]+t.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Results have been graduated using the Whittaker-Henderson Type B two-dimensional method.

Appendix B

Study Population and Methods

A. Overview

For this study, we analyzed over 538,000 records of disabled beneficiaries from two separate 5-year periods: January 1, 1997-December 31, 2001 and January 1, 1992-December 31, 1996. The primary variables of interest include the reason for decrement from the disability rolls, and duration since entitlement. However, factors other than time since selection affect survival. These include the standard concomitant variables of select age and sex of the beneficiary. The analysis reflects exposure counts of roughly 1,088,000 life-years for males and 327,000 life-years for females. A 10-year select period was chosen for this study, implying that decrement for participants 10 or more years beyond selection is no longer a function of select age, but a function of attained age only.

As it relates to the HIV cohorts under observation, the main cause of termination of DI or SSI benefits is death of the beneficiary. Termination may also occur for non-death reasons such as returning to work, conversion to old-age benefits under the DI program, or 12 consecutive months of non-pay status under the SSI program. However, due to the sparsity of such terminations among HIV beneficiaries, separate decrement tables are not developed for categories other than death. The table below provides a breakdown of the termination data collected from the MBR and SSR.

Number of HIV Disabled Beneficiaries on the DI and SSI Rolls with Benefits Terminated, by Reason

	Male	Female	Total
	(January 1997-December 2001)		
Death	44,747	13,643	58,390
Non-Death	11,440	3,657	15,097
Total	56,187	17,300	73,487
	(January 1992-December 1996)		
Death	124,553	21,136	145,689
Non-Death	7,259	2,450	9,709
Total	131,812	23,586	155,398

Source: HIV database as of June 2004. Results do not include auxiliary beneficiaries payable under the DI program.

B. Data Considerations

Beneficiaries observed for this study are categorized under one of several HIV disability impairment codes. A code of 042, 043, or 044 was listed as either the primary or secondary reason for impairment during the observation period.[17] Note that HIV is not necessarily the *primary* reason for impairment—for example, if an individual is incapacitated by depression brought on by HIV, then depression might be the primary diagnosis, with HIV coded as secondary. We also consider beneficiaries who have had an HIV impairment in the past, but appeared on the rolls during the observation period under another impairment category. There are instances where HIV is present, but the applicant is either (1) denied benefits, or (2) initially allowed benefits without HIV being listed as the primary or secondary reason for disability. These cases are not captured in the study.

The mortality experience is affected by several unique circumstances. It is recognized that a claimant may die during the 5-month waiting period required under the DI program—and therefore never becomes entitled; or the claimant may die before final disposition of the disability claim—in which case only retroactive disability benefits may be payable. With regard to the DI program, participation in this study is contingent upon entitlement to benefits. Therefore, death *prior to* entitlement is not a "countable" death. As a result, the probability of death during the first year of entitlement may be artificially lower than expected. Note that the SSI program does not have a waiting period and SSI-only recipients come under observation as soon as eligibility is determined.

In general, observation ends with the period in which benefits are terminated. As previously mentioned, *non-death* termination of benefits can occur when a beneficiary returns to work, or remains in non-pay status for 12 consecutive months under the SSI program—for example, due to excess income or resources. Under the DI program, disabled workers may convert to old-age benefits at anytime beginning with age 62, with mandatory conversion taking place at normal retirement age. Such conversion is considered a termination of disability benefits as old-age benefits become payable from the OASI Trust Fund. However, disabled beneficiaries continue under observation in this study beyond the time of the switch. Consequently, deaths for attained ages 62 and older may come from the OASI rolls. The SSI program has an *aged* category for non-disabled individuals whose eligibility requires them, in part, to be age 65 or older. However, there is no automatic conversion to this category for disabled recipients—who generally continue to be considered disabled beyond this age, and also continue under observation in this study.

Other exceptional cases exist where observation continues beyond non-death termination of benefits. This occurs for some SSI-only cases in which the SSR is automatically annotated upon reporting of death. Instances where death is recorded after non-death termination may result in additional exposure credited to an otherwise terminated recipient. However, this anomaly does not materially impact results.

[17] Code 042 is used primarily for cases involving AIDS and AIDS-Related Complex; 043 may be used as the primary or secondary diagnosis code where symptomatic HIV infection is accompanied by symptoms reasonably assumed to be related to the infection; 044 is used when asymptomatic HIV is involved either as the primary or secondary reason for allowance.

This study integrates a special longitudinal file constructed from the SSR. However, due to the nature of the data, several problems were encountered in combining MBR records with SSR records relating to individuals who receive both DI and SSI benefits during a period of disability. As they appear on the MBR, entitlement and cessation dates are utilized for processing concurrent cases while accounting for overlapping periods of DI entitlement and SSI eligibility. Under this convention, observation begins from the date of DI entitlement. As a result, up to 5 months of exposure may not be captured for beneficiaries who receive an SSI benefit during the DI 5-month waiting period. Also some exposure may not be captured for beneficiaries who transition from concurrent status to SSI-only eligibility, due to SGA earnings after the 36-month DI extended period of eligibility. In such cases, observation ends upon termination of DI benefits as a result of work activity. However, SSI eligibility may continue if earnings are such that *countable income* does not exceed the applicable Federal SSI benefit rate. It should be noted, however, that the above omissions do not materially impact results. Refer to appendix C for details on SSI considerations.

Another problem involves beneficiaries having multiple records on the SSR. It is possible that different records are related to different impairments. For example, an SSI beneficiary might have several records of eligibility; at least one of which, but not necessarily all, are related to HIV impairments. Given the structure of the longitudinal file, it is not possible to distinguish which records in multiple-record cases are relevant to the study and which are not. In such instances, all records of eligibility are processed.

C. Methods

The availability of complete data on each participant in the study (including date of birth, date of entitlement, and cause of decrement) allows for direct estimation of the *multiple-decrement probabilities* $q^{(i)}$, where i represents the cause of decrement. The ordered pair (r, s) is determined for each age interval $(x, x+1]$ for which a participant is under observation. The concept is that each participant enters the interval at age $x+r$ $(0 \le r < 1)$, and is scheduled to exit the interval at age $x+s$ $(0 < s \le 1)$. Numerically, $s-r$ is the amount of time (measured in life-years) that the participant is exposed to the risk of decrement. Summing over all participants, we can calculate the *scheduled exposure* contributed to an interval.[18]

A participant may survive to the end of an interval, or may exit the study prior to the end of the interval in the event of:

- Death,
- Recovery or other non-death decrement, or
- The end of the observation period—termed an *observed ender.*

Based on these criteria, a *scheduled ending age*, $x+s$, is established for an age interval in which the participant is expected to either survive to the end $(s = 1)$, or become an observed ender $(s < 1)$.[19] Scheduled exposure is then credited to the appropriate interval (or *duration* since selection) using the following conditions: if the participant survives to the end of the interval, then exposure is credited from $x+r$ to $x+1$; if the participant dies or is an observed ender within the interval, then exposure is credited from $x+r$ to $x+s$; if the participant withdraws from the study during the interval (for example, recovers), then exposure is credited from age $x+r$ to $x+s$. Death probabilities are found by dividing the observed number of deaths in an interval by the aggregate scheduled exposure for that interval.

D. Select Age, Duration, and Graduation

Entitlement to disability benefits usually occurs at some fractional age of the beneficiary. To facilitate exposure calculations, the *insuring age* of the participant and corresponding *insuring date of birth* are substituted for the actual age at entitlement and actual date of birth. In this study, the insuring age is calculated to be the beneficiary's *age last birthday* as of entitlement. For example, consider the following beneficiary data:

Date of entitlement: 1-February-1992
Date of birth: 10-July-1960
Actual age at entitlement: 31 years, 206 days
Insuring (select) age: 31 years
Insuring date of birth: 1-February-1961

Use of insuring age results in an integral *select age* at entitlement ensuring that subsequent durations begin on the entitlement anniversary. This is true whether the participant enters the study during the observation period, or is already part of the entitlement group when the observation period opens.

The intervals for which a participant is under observation—measured from the select age—are called *durations*. For each select age $[x]$ and duration n, the ordered pair (r, s) represents the amount of exposure contributed to the observation interval $([x]+n, [x]+n+1]$. For durations extending beyond the 10-year select period, exposure is credited to the appropriate attained age interval. For details on the crediting of exposure, the reader is referred to Actuarial Study No. 118.

The select-and-ultimate multiple-decrement probabilities are graduated using the two-dimensional Whittaker-Henderson Type B method.[20] The horizontal and vertical smoothing coefficients were chosen to obtain some degree of smoothness

[18] For a complete discussion, refer to chapter 6 of *Survival Models and Their Estimation* (London 1988, second edition).

[19] A participant who dies during the interval does so at age $x+t \le x+s$; a participant observed to withdraw from the study during the interval also does so at age less than $x+s$.

[20] For details, refer to chapter 8 of *Graduation: The Revision of Estimates* (London 1985).

within individual durations (columns) as well as within select ages (rows). The erratic nature of the data at various attained ages results in some deviation from the original estimates.

Although HIV disability beneficiaries may live to older ages, current administrative records show very little evidence of survival beyond age 74. Therefore, no results are presented beyond this attained age.

E. Survival Tables

Survival tables 2A-2B (and A.2A-A.2B) are constructed from the select-and-ultimate death probabilities. The functions $l_{[x]}, l_{[x]+1}, \ldots, l_{74}$ are first calculated for select age $[x] = 18$, using a radix of 100,000. This step determines values for the ultimate period of the table. Functions for select ages $[x] > 18$ are then derived retrospectively from the ultimate values. For example, $l_{[x]}$ is determined from l_{x+10} using the survival probabilities of the select period for the given select age. The number $l_{[x]+t}$ represents the number alive at the beginning of duration t from those originally entitled at select age $[x]$. Note that the number alive at various select ages are not actual counts of disability beneficiaries. Rather, the number living at the beginning of any duration are for illustrative purposes, chosen to represent the probability of survival based on values shown in tables 1A-1B (and A.1A-A.1B).

The survival tables are read across the row, or *select period*, for 0-10 years since selection, then down the last column, or *ultimate period* for 10 or more years since selection. Numbers for the following example can be found in table 2A. Of the male beneficiaries disabled at select age 30, the following table shows the number surviving (that is, still on the disability rolls) after the stated number of years:

Years since entitlement	Number living	Probability of survival	Attained age
0	71,589	1.000	30
1	64,568	.902	31
5	47,251	.660	35
10	35,426	.495	40
15	26,071	.364	45

F. Expected Future Lifetime

Future lifetime tables are produced from the survival functions described above using basic actuarial principles found in any standard actuarial text on life contingencies. Tables 4-5 (and A.4-A.5) show the results of aggregating over duration by select or attained age.

Aggregate lifetime for a specific *select* age is an exposure-weighted average of the expected future lifetime at each duration of that age. This differs from aggregate lifetime for a specific *attained* age, which is an exposure-weighted average of the expected future lifetime of those durations representing a particular attained age.

For example, aggregate lifetime for *select* age 40 is a weighted average of the expected lifetimes shown for each duration 0 through 34—where each duration represents a different attained age. In contrast, aggregate lifetime for *attained* age 40 is the average of the expected lifetimes for a select 40-year-old at duration 0, select 39-year-old at duration 1,... select 20-year-old at duration 20—all of whom are attained age 40.

G. Probabilities and Absolute Rates

The data for this study were collected in a multiple-decrement environment, however, we explicitly consider only two major decrement classes—death and non-death. The symbol $q^{(d)}$ represents the probability of death in the presence of other decrements. Mathematically, this is represented by:

$$q_x^{(d)} = \int_0^1 {}_t p_x^{(\tau)} \, \mu_{x+t}^{(d)} \, dt$$

where $p^{(\tau)}$ is the probability of surviving under all decrements; and $\mu^{(d)}$ is the force of mortality.

For each of the causes of decrement in a multiple-decrement model, it is possible to define a single-decrement model that depends only on a particular cause of decrement. The symbol $q'^{(d)}$ represents the *single-decrement (absolute) rate* of death. Mathematically, this is represented by:

$$q_x'^{(d)} = \int_0^1 {}_t p_x'^{(d)} \, \mu_{x+t}^{(d)} \, dt$$

where $p'^{(d)}$ is the probability of *not dying*. In this representation, observation stops at the point of non-death decrement, and scheduled exposure (as previously discussed) is replaced by the smaller quantity of *exact exposure*. The result is lower exposure totals relative to those used in formulating death probabilities.

Although not presented in this study, absolute rates may be obtained from the death probabilities shown in tables 1A-1B and HIV non-death decrement probabilities. Assuming a constant force of mortality over the age interval $(x, x+1)$, absolute rates may be derived using the following:

$$q'^{(d)} = 1 - [1 - q^{(\tau)}]^{q^{(d)}/q^{(\tau)}}$$

where $q^{(\tau)} = 1 - p^{(\tau)}$ (all other symbols are as described above).[21]

[21] For a complete discussion on multiple-decrement probabilities, the associated single-decrement rates, and construction of the select-and-ultimate multiple-decrement tables found in this study, the reader is referred to chapter 10 of *Actuarial Mathematics* (Bowers et al. 1997).

Appendix C

Disability Program Overview

A. Definition of Disability

For purposes of entitlement to disability benefits under the DI program, *disability* is defined as the inability to engage in any substantial gainful activity (SGA) by reason of any medically determinable physical or mental impairment. The impairment must be expected to result in death or to last for a continuous period of at least 12 months.

The formal determination of disability is based on a sequential process defined in regulations. The first step compares actual earnings to a specified level to determine ability to engage in SGA. Absent such actual earnings evidence, the sequential process continues with an evaluation of the nature and severity of the alleged impairment, followed by consideration of age, education, and work experience.

The same definition of disability applies when determining eligibility of adults under the Supplemental Security Income (SSI) program as described under title XVI of the Social Security Act. This means-tested cash benefits program is also administered by the Social Security Administration.

Special provisions exist for the evaluation of insured status and disability in cases of statutory blindness.

B. Disability Insured Status and Waiting Period

To be insured for DI benefits, a worker must earn a requisite number of *quarters of coverage* (QCs) in employment covered by Social Security.[22] In addition to earning sufficient QCs to be deemed *fully insured*[23], the worker must also fulfill a recency-of-work requirement to be deemed *disability insured.* The number of required recent QCs varies by age, and ranges from 6 out of the last 12 quarters immediately preceding the onset of disability, to 20 out of the last 40. There is no insured status requirement for disability benefits under the SSI program.

There is a required waiting period for DI benefits, which consists of 5 consecutive calendar months beginning with the earliest calendar month throughout which the worker satisfied both the definition of disability and the disability insured requirements. Benefits are not payable during this period. By law, the waiting period is waived for individuals who had a prior period of disability which ended within 5 years of the current period of disability. There is no waiting period for disability benefits under the SSI program.

C. Substantial Gainful Activity (SGA)

Substantial work activity involves the performance of significant physical or mental duties that are productive in nature. *Gainful work activity* is work performed for pay or profit. The degree to which an impairment limits an individual's ability to perform basic work activities is essential in determining the severity of the disability.

Certain earnings criteria have been established as reasonable indications of whether an individual is engaging in SGA. The dollar amount associated with defining SGA was originally set at $100 at the inception of the DI program. This amount received ad hoc increases from time-to-time, including a 1990 increase to $500 from $300, and a 1999 increase to $700 from $500. Beginning in 2001, the amount has been indexed each year by increases in average wages. As of 2005, an employee earning over $830 per month will ordinarily demonstrate SGA; less than that amount will ordinarily demonstrate lack of SGA.

D. Impairments

To establish the presence of an impairment, an individual must provide a claim with supporting medical evidence of the alleged disability. To determine the severity of the disability, SSA consults the *Listing of Impairments*, which sets forth the criteria needed to be met by various impairments in order for the claimant to be judged incapable of performing SGA. However, a diagnosis of a listed impairment alone may not be sufficient to establish disability; associated symptoms, clinical signs, and laboratory findings must accompany it.

Many individuals are found to be disabled even though impairments fail to meet the level of severity required in the medical listings. In these instances, *vocational factors* have been considered along with an individual's medical condition. Age, education, and job skills are given increasing weight with advancing age and are particularly significant in determining disability among workers age 50 or older.

E. Determination Process

At the initial stage of a claimant's request for disability benefits, the State Disability Determination Services (DDS) will make a decision to allow or deny the claim. A claimant who is dissatisfied with the initial decision may pursue an appeals process:

- The claimant may request the reconsideration of an initial decision. This entails re-examination of administrative records—in the same DDS—with the opportunity to submit new material evidence supporting the claim.
- If disagreement persists after the reconsideration, the claimant may request a hearing before an administrative

[22] As of 2005, a worker receives one QC (up to a maximum of four) for each $920 of annual covered earnings. This amount is indexed each year by increases in average wages.

[23] Fully insured status is obtained by earning one QC for each year after attainment of age 21 and before the earliest of (1) attainment of age 62, (2) onset of disability, or (3) death.

law judge (ALJ) of the Office of Hearings and Appeals (OHA).

- If disagreement persists after the ALJ decision, the claimant may request a review by the Appeals Council of OHA, and then may pursue civil action in a Federal district court.

Many factors exist that affect the number of disability claims filed as well as the frequency of subsequent decisions to either allow or deny benefits. However, the impact of any one factor is difficult to gauge. In general, they may be administrative, economic, or demographic in nature.[24]

The subjectivity inherent in assessing disability leaves considerable room for interpretation of evidence. As a result, overturned decisions at the OHA level and beyond remain relatively high. Factors that contribute to the high reversal rate include:

- A group of decision-makers different from those used at the initial and reconsideration stages,
- Use of legal representation and further opportunity to submit new material evidence supporting the claim.

[24] Some of the determinants which may have a significant impact on both the number of claims filed and the rate of favorable determinations are discussed in detail in Actuarial Study No. 118: *Social Security Disability Insurance Program Worker Experience* (Zayatz, June 2005).

F. SSI Considerations

The SSI program provides assistance to individuals who are either ineligible for various types of Social Security benefits, or whose benefits could not provide a basic level of income. This "last resort" type of assistance is available to aged, blind, or disabled individuals whose income and resources are below specified levels. The program takes into account all income and resources that an individual has and applies uniform standards and objective eligibility criteria to measure the need for assistance. These include:

- Medical determination of disability and blindness equivalent to that used by the DI program.[25]
- 65 as the minimum age requirement for assistance based on age.
- A limitation on the amount of income—including any Social Security benefits—and resources that an individual can have and still qualify for SSI benefits.[26]

[25] Note that under SSI, there are no requirements relating to disability insured status or waiting period as set forth by the DI program.

[26] The *countable income* limits for individuals and couples are equal to their respective Federal benefit rates and are increased annually according to changes in the cost of living. Effective January 1, 2005, the Federal benefit rate is $579 a month for individuals and $869 a month for couples. The resource limit is $2,000 in countable resources for individuals and $3,000 for couples. For further details in areas such as income and resource exclusions and interaction with benefits from Social Security and other Federal or State-sponsored programs, refer to the *Annual Report of the Supplemental Security Income Program* (May 2005).